# 2016 PINNACLE
## TOWABLES

# PINNACLE

Jayco®

**Generations of family fun.**

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ECO advantage™

THE JAYCO ECOADVANTAGE IS OUR COMPANY'S COMMITMENT TO PROTECTING THE ENVIRONMENT. Through Jayco's company-wide sustainability program, we're creating better ways to build better RV's using fewer natural resources. Already, our initiative has created significant impact. As of 2014 our company has:

## Recycled

- 7,192 tons of wood
- 2,354 tons of scrap metal
- 1,428 tons of cardboard and paper

## Conserved

- 9,997,400 gallons fo fresh water, enough to meet the daily needs of 133,293 Americans.
- 34,277 gallons of gas, enough for Americans to drive more than 957,600 miles.
- Enough electricity to power 1,745 homes for tha year.

## Saved

- 60,900 mature trees.
- Enough landfill airspace to meet the annual disposal needs of a community of 44,683 people.

We're proud of our results, and we know those numbers show that a little initiative can go a long way. The Jayco EcoAdvantage is our way of making sure endless generations can enjoy the Great Outdoors.

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WARNING: Read all instructions in this manual and component manufacturer supplied information before using your RV.

This manual has been provided by Jayco for the sole purpose of providing instructions concerning the operation and maintenance of this vehicle and its components. Nothing in this manual creates any warranty, either expressed or implied. The only warranty offered by Jayco is as set forth in the limited warranty applicable to this vehicle.

The owner's failure to provide required service and/or maintenance could result in the loss of warranty. The owner should review the Jayco limited warranty and the limited warranties that apply to specific components that are offered with this vehicle.

Instructions are included in the manual for operating various components which are optional on some vehicles or may not be available on your particular model. "If so equipped" does not indicate or imply that the component(s) or option(s) were at any time available, or can be retrofitted to your model. In addition, the owner should refer to individual manufacturer's operating instructions contained in the owner's packet.

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***Congratulations!*** Thank you for selecting a Jayco RV. We are excited to welcome you to our growing RV family. Jayco is the largest privately held manufacturer of recreation vehicles in the world. We are committed to being the most respected name in RVs. We invite you to drop by our Visitors Center located in Middlebury, Indiana. To book a group tour or check our scheduled factory tour times (free admission, closed holidays) please call 1-800-RV-JAYCO.

## About This Manual

This manual is a guide to operation of the features, equipment and controls in your recreation vehicle. Our recreation vehicles are available in several sizes and models, so accessories and components may differ. Some equipment described in this manual may not apply to your RV. If you find components vary significantly from what is described, please contact your dealer to ensure you have the correct information. Nothing in this manual creates any warranty, either expressed or implied.

This Owner's Manual and Warranty Packet are to be considered permanent components of the vehicle. Keep them in your recreation vehicle at all times for personal reference. If the RV is sold, they should remain with the vehicle for the next owner. Nothing in this manual creates any warranty, either expressed or implied, nor does it cover every possible detail of equipment, standard or option, installed on or in your RV.

***Information, illustrations and specifications in this manual reflect the most current available at the time of publication approval, are subject to change and not intended to indicate actual size.***

## Warranty packet

There are components that are excluded from the vehicle warranty, or are warranted separately by their own individual manufacturer's limited warranty. The Warranty Packet contains these component manufacturer supplied manuals or information sheets, warranty cards and/or registrations. Consult this information for questions regarding operating, maintenance, servicing instructions and warranty coverage. It is important you complete and mail warranty cards and registrations within the prescribed time limits to avoid loss of warranty coverage.

## Safety Alerts

Throughout this manual, certain items are labeled **NOTE, CAUTION, WARNING, and DANGER.** These terms will alert you to precautions that can involve risk to your vehicle or to your personal safety.

Read and follow them carefully. National Safety Associations and organizations require many of the instructions listed. Always use the appropriate safety gear when servicing or maintaining your recreation vehicle. Please call your dealer or our customer service representatives if you are unsure how to proceed.

These signal words indicate precautions and potential situations, which if not avoided, may result personal injury, property damage, or damage to your recreation vehicle. These precautions are listed in the appropriate areas in this Owner's Manual, and in the information contained in the Warranty Packet, and on safety labels affixed to your recreation vehicle. Read and follow them carefully.

**NOTE:** Gives helpful information.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

**NOTICE**

Indicates a potential situation that,if not avoided, may result in property damage or damage to your motor home.

**⚠ CAUTION**

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

**⚠ WARNING**

Indicates a potentially hazardous situation that, if not avoided, may result in death or serious injury.

**⚠ DANGER**

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This alert information is limited to the most extreme situations.

## Reporting Safety Defects

**In the United States**

If you believe that your RV has an alleged defect that could cause a crash or cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) and Jayco.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer or Jayco. For additional information, please refer to the NHTSA website at www.safercar.gov.

*To contact NHTSA by phone:*
Call the Department of Transportation (DOT) Vehicle Safety Hotline at 1-888- 327-4236 and a NHTSA representative will record your complaint information (TTY: 1-800-424-9153 or 1-202-484-5238).

***To contact NHTSA by mail:***
Office of Defects Investigations/CRD
NVS-216
1200 New Jersey Ave SE
Washington, DC 20590

**In Canada**
If you believe your RV has an alleged safety defect, you should contact Transport Canada and Jayco. Transport Canada prefers to be called instead of posted mail or email as it enables their investigators to confirm that your information is correct, and to answer your questions accurately. For additional information, please refer to the Transport Canada website at www.tc.gc.ca.

**To contact Transport Canada by phone:**
Call 1-800-333-0510 (or 1-613-993-9851 if you are calling from the Ottawa region) and ask to speak to a defect investigator.

**To contact Transport Canada by mail:**
Road Safety and Motor Vehicle
Regulation Directorate
Transport Canada
Tower C, Place de Ville
330 Sparks Street
Ottawa, Ontario K1A 0N5

## Manufacturing Process

Jayco recreation vehicles are manufactured for use as temporary living quarters for recreation, camping and travel uses, all as defined by the bylaws of the Recreation Vehicle Industry Association (RVIA).

ELECTRICAL • PLUMBING • HEATING • FIRE SAFETY
MANUFACTURER CERTIFIES COMPLIANCE WITH STANDARD FOR RECREATIONAL VEHICLES ANSI NO. A119.2 AND NATIONAL ELECTRICAL CODE ANSI/NFPA NO. 70
0000000
RECREATION VEHICLE INDUSTRY ASSOCIATION
RVIA
MEMBER R.V.I.A.

This recreation vehicle is not intended for use as a full-time residence or for commercial use. Commercial use means using the RV as a business asset such as a mobile office or using the RV for lease or rental purposes.

Jayco reserves the right to discontinue or change specifications or design at any time without notice and without incurring any obligation whatsoever. RV's built for sale in Canada may differ to conform to Canadian Codes.

## Options & Equipment

The **JAYCO** recreation vehicle is available in several sizes and models, so accessories and components may differ slightly between models. Some equipment described in this manual may not apply to your vehicle.

Jayco reserves the right to discontinue or change specifications or design at any time without notice, and to make additions or improvements without incurring any obligations upon itself to install these changes on its products previously manufactured. Recreation vehicles built for sale in Canada may differ to conform to Canadian Codes.

## Customer Responsibility

It is important you read and understand all instructions and precautions before operating the recreation vehicle. Even if you are an experienced RV'er we encourage you to thoroughly read this Owner's Manual, as well as the information contained in your Warranty Packet.

As technology advances, new improvements enter the RV industry every day, and each RV manufacturer has its own unique manufacturing process.

Familiarize yourself with the applicable warranties. There are components that are excluded or warranted separately by their individual manufacturer's limited warranty (refer to the Warranty Packet).

As the owner of the RV, you are responsible for regular and proper maintenance performed in accordance with this manual and the OEM manuals. Regular and proper maintenance will help prevent conditions arising from neglect that are not covered by warranty. It is your responsibility and obligation to return your RV to your dealer for warranty service repair.

## Update Your Contact Information

Please notify Jayco Customer Service as soon as possible of a change of address by writing or calling us. For notification of a change of ownership, please fill out the appropriate form located in this manual and mail it to Jayco Customer Service along with documentation showing proof of ownership. Please include your current vehicle mileage (motorized only).

## Dealer Responsibility

At the time of sale of the new RV, your Jayco dealer is expected to:

- □ Deliver your RV in the best condition possible. Your RV must pass the
- □ dealer's pre-delivery inspection (PDI), including all systems tests.
- □ Provide orientation of the RV, its systems, components and operation.
- □ Request that you read all warranty information and explain any provision not clearly understood.
- □ Ensure you receive the Warranty Packet. Your dealer can assist you in completing the OEM warranty cards or registrations, and locate any required component model or serial numbers.
- □ Complete and return the "Warranty Registration and Customer Delivery Form" to Jayco within 10 days of delivery to activate the applicable warranty coverage.

The **Limited Warranty** is activated only after Jayco receives a signed and dated "Warranty Registration and Customer Delivery Form" from your dealer.

## Suggestions For Obtaining Service

To help ensure your dealer provides the level of service you expect, here are some suggestions we would like to make:

**Contact your dealer at once…** Do not wait until you are ready to use your RV. Your dealer may not be able to service it immediately and/or the repair may require parts be ordered. The dealer's service department is busiest on Mondays, Fridays and before the holidays.

**Prepare for the appointment…** If you are having warranty work performed, be sure to have the right papers with you. Take your warranty folder and have your vehicle information available. All work to be performed may not be covered by the warranty. Discuss additional charges with the service personnel.

**Prepare a list…** Provide your dealer with a written list of specific repairs needed. It is important that you provide any vehicle repair history to the dealer's service personnel.

Keep a maintenance log of your vehicle's service history. This can often provide a clue to the current issue.

**Be reasonable with your requests…** If you leave a list with several items and you need your vehicle returned back by a specific time, discuss the situation with the dealer's service personnel and list your items in order of priority. This may include making a second appointment for work not completed or parts that the dealer may need to order.

**Don't expect to look over the technician's shoulder…** Please don't be offended if you are told you cannot watch the work being done. Some insurance requirements forbid admission of customers to the service area.

**Inspect the work performed…** Finally, check out the service or repair job when you pick up your vehicle. Notify the dealer's service personnel immediately of any dissatisfaction. If you can't return the vehicle immediately for repair, make an appointment as soon as possible.

Please be aware that all service shops require notification of any issues with their repairs within a specified time limit. Make sure you are familiar with their repair policies.

## *Customer Relations*

Jayco has empowered its dealers to make warranty and repair decisions. If a special circumstance occurs that requires information from Jayco, we have asked your dealer's service management to make the contact on your behalf. This is why you should always talk to your dealer's service management first.

**NOTE:** Please provide the following information when contacting us for assistance:

- Customer name and current location.
- Phone number where you can be reached.
- 17-digit chassis Vehicle Identification Number (VIN) or 9-digit Serial Number.
- The current vehicle mileage.
- Your date of purchase.
- If applicable, the component description, serial number and model number.
- A detailed description of the concern.
- The name of your selling dealer.
- If different from above, the contact information for the RV repair facility you are contacting Jayco to discuss.

| | |
|---|---|
| Mailing address | Shipping address |
| Jayco, Inc. | Jayco, Inc. |
| Customer Service | Customer Service |
| P.O. Box 460 | 100 Bontrager Drive |
| 903 S. Main Street | Bldg 42 Door 4220 |
| Middlebury IN 46540 | Middlebury IN 46540 |
| Phone (toll-free) | (800) 283-8267 |
| Phone (local) | (574) 825-0608 |
| Fax (toll-free) | (866) 709-9139 |
| Brochure request | info@Jayco.com |
| Parts email | parts@Jayco.com |
| Service email | service@Jayco.com |
| Website | www.Jayco.com |

**An important note about alterations and warranties**
Installations or alterations to the original equipment vehicle as distributed by Jayco are not covered by the Jayco Limited Warranty. The special body company, assembler, equipment installer or upfitter is solely responsible for warranties on the body or equipment and any alterations (or any effect of the alterations) to any of the parts, components, systems or assemblies installed by Jayco. Jayco is not responsible for the safety or quality of design features, materials or workmanship of any alterations by such suppliers.

## Jayco Travel Club

All owners of Jayco RVs are eligible for membership in the Jayco Travel Club. The club promotes family camping and the active use of your RV with others who have similar interests in the RV lifestyle.

One "International Rally" is held each year in various locations around the United States and Canada. In addition, the club offers a variety of local and regional activities throughout the year.

By belonging to the Jayco Travel Club, you will find new ways to enjoy your RV and make friends all across the country. For more information, please visit www.Jaycorvclub.com or call 1-800-262-5178.

## JayPlus™ Extended Service Contract

Don't let unexpected repair costs keep you from traveling toward your dreams. Protect yourself with a JayPlus™ Extended Service Agreement. For more information, contact your dealer or call 1-800-527-3426.

Your dealer can help you obtain a JayPlus™ insurance quote from GMAC Insurance or call 1-877-484-2261 (Savings Code: GL 2A).

## Jayco Customer First Emergency Roadside Assistance

Jayco has teamed up with Coach Net, the largest RV emergency road service in the country to give you 24 hour, 7 days a week assistance in obtaining dependable service when and

where you need it. We are offering this free of charge for the first year of ownership from the date of purchase *(certain restrictions apply*)*.

You may continue your Customer First Roadside Assistance benefits in the following years by contacting Coach Net to discuss any applicable terms and rates for this independently continued coverage at 1-877-801-0333.

For further details and instructions on how to access your Roadside Assistance benefits, please refer to your *Member Benefit Guide* which will be mailed 6-8 weeks from the date the completed *Warranty Registration and Customer Delivery Form* is received by Jayco, or by contacting Coach-Net (www.coach-net.com) at 1-877-801-0333.

**To qualify for coverage, your RV must be eligible as set forth under the terms of the applicable "Limited Warranty" offered by Jayco.*

## Obtaining Emergency Warranty Repair

A roadside emergency can happen at any time, whether your RV is new or old. If you are traveling, using the following guidelines can help get you back on the road faster.

1. Call 1-800-RV-JAYCO or use our website dealer locator to find an authorized Jayco dealer in your area. Contact them for an appointment; they will handle all warranty repair billing and returned parts for you.
2. If you cannot locate an authorized Jayco dealer near you, ask the campground staff for referrals or check the local telephone yellow pages. Or contact Jayco Customer Service or your selling dealer for assistance in locating a repair facility.
    a. Contact the RV repair facility to discuss your situation and make an appointment. Ask how their billing will be handled. They may choose to bill Jayco directly; otherwise, you are expected to pay them.
    b. Have the RV repair facility inspect your RV. Either they or you must call Jayco Customer Service to discuss applicable warranty coverage prior to any repair work being performed.
    c. Jayco Customer Service will issue an authorization number upon warranty repair approval and advise if any original parts need to be returned.
    d. Once Jayco Customer Service has issued an authorization number, the RV repair facility may begin actual repair to your RV.
    e. Inspect the completed repair work thoroughly. If you are not satisfied, communicate that immediately to the RV repair facility management. Make sure you are satisfied with the repair before you pay or leave the premises.
    f. For reimbursement, either you or the RV repair facility must send a copy of your itemized repair bill and all requested return parts by UPS (regular ground, freight pre-paid) within 60 days of the completed repair date.

**To expedite processing your warranty claim, include your name, address, phone number, RV 17-digit VIN and authorization number. If returning parts, include a copy of your return freight bill.**

**Obtaining weekend or after business hours repair assistance**

If an authorized Jayco dealer is not located nearby, contact your selling dealer for assistance. If your dealer is closed, check with the campground staff or telephone yellow pages for an RV repair facility. Have the item repaired and contact Jayco Customer Service immediately the following business day.

*Failure to contact Jayco Customer Service, unauthorized or improper warranty repairs, or failure to return requested original parts may result in loss of reimbursements and/or loss of warranty.*

## Obtaining Service For Separately Warranted Items

Your selling dealer is responsible for servicing your RV before delivery, and has an interest in your continued satisfaction. We recommend your dealer perform all inspection, warranty and maintenance services. Some dealers may be authorized service centers for those OEMs whose products are warranted separately and excluded from the Limited Warranty.

## Obtaining Service at Jayco

Should your RV be in need of service, and your dealer recommend that the repairs be made at the Jayco Factory Service Center, your RV may be returned to us with the following guidelines*:

- □ You or your dealer must make a confirmed appointment a minimum of **60 days** prior to dropping off your RV at the Jayco Factory Service Center.
- □ The holding tanks must be emptied and rinsed. We have a dumping station available for customer use.
- □ The propane system and all electrical systems must be shut down and turned off. We are not responsible for discharged batteries or propane tanks.
- □ During the appropriate season, please ensure your RV is winterized.
- □ Unless prior approval has been obtained from the Jayco Factory Service Center, all personal items must be removed from the area where you are requesting service repair and the refrigerator emptied. We are not responsible for loss of food items.
- □ All transportation costs are the responsibility of the owner. You may need to arrange for alternative accommodations for some types of repairs. Please be prepared accordingly
- □ **Jayco Customer Service occasionally utilizes local independent repair facilities. Your RV may be referred to or repaired by one of these local repair facilities.*

## Parts & Accessories

Contact your independent Jayco dealer for assistance in obtaining replacement parts or accessories. Jayco does not sell parts retail direct or to non-authorized dealers. If the original part is no longer available, Jayco makes every effort to provide an appropriate substitute.

### TOWABLE LIMITED WARRANTY

**WHAT AND WHO IS COVERED**

The Jayco warranty covers this recreational vehicle ("RV"), when used only for its intended purpose of recreational travel and camping, for two (2) years. It covers RV's that are sold in, and remain in, the United States, U.S. Territories and Canada, only. The warranty period begins on the date that the RV is delivered to the first retail purchaser by an independent, authorized dealer of Jayco, or, if the dealer places the vehicle in service prior to retail sale, on the date the RV is first placed in such service. In the event that a substantial defect in material or workmanship, attributable to Jayco, is found to exist during the warranty period, it will be repaired or replaced, at Jayco's option, without charge to the RV owner, in accordance with the terms, conditions and limitations of this limited warranty.

This limited warranty applies to the first consumer purchaser only. All rights and limitations within this warranty are applicable to the original owner of the RV only. Jayco's limited warranty only covers substantial defects in materials, components, or parts of the RV attributable to Jayco. It does not replace, modify, or apply to the warranties provided by the manufacturers that supply the products used by Jayco to assemble the RV, like the frame. You may contact an independent, authorized dealer for details.

Jayco's obligation to repair or replace defective materials or workmanship is the sole obligation of Jayco under this limited warranty. Jayco reserves the right to use new or remanufactured parts of similar quality to complete any work, and to make parts and design changes from time to time without notice to anyone. Jayco reserves the right to make changes in the design or material of its products without incurring any obligation to incorporate such changes in any product previously manufactured. Jayco makes no warranty as to the future performance of this RV, and this limited warranty is not intended to extend to the future performance of this RV, or any of its materials, components or parts. In addition, the RV owner's obligation to notify Jayco, or one of its independent, authorized dealers, of a claimed defect does not modify any obligation placed on the RV owner to contact Jayco directly when attempting to pursue remedies under state or federal law.

**LIMITATIONS, EXCLUSIONS AND DISCLAIMER OF IMPLIED WARRANTIES**

**ANY IMPLIED WARRANTY THAT IS FOUND TO ARISE BY WAY OF STATE OR FEDERAL LAW, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR ANY IMPLIED WARRANTY OF FITNESS, IS LIMITED IN DURATION TO THE DURATION SET FORTH IN THIS LIMITED WARRANTY AND IS LIMITED IN SCOPE OF COVERAGE TO THE SCOPE OF COVERAGE OF THIS LIMITED WARRANTY.**

Jayco makes no warranty of any nature beyond that contained in this limited warranty. Jayco does not authorize any person to create any other obligation or liability for it regarding this RV, and Jayco is not responsible for any representation, promise or warranty made by any dealer or other person beyond what is expressly stated in this limited warranty, and no one has the authority to enlarge, amend or modify this limited warranty. Any selling or servicing dealer is not Jayco's agent, but an independent entity.

**JAYCO SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES THAT MAY RESULT FROM BREACH OF THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY.**

**THIS EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES SHALL BE INDEPENDENT OF ANY FAILURE OF THE ESSENTIAL PURPOSE OF ANY WARRANTY, AND THIS EXCLUSION SHALL SURVIVE ANY DETERMINATION THAT THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY HAS FAILED OF ITS ESSENTIAL PURPOSE.**

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

**HOW TO GET SERVICE**

To obtain warranty service the owner must do all of the following:

1. Notify an independent, authorized dealer of Jayco, or Jayco, of the substantial defect

in material or workmanship attributable to Jayco, within the warranty coverage period designated above;

2. Provide the notification mentioned in (1), above, within ten (10) days of when the owner discovered, or should have discovered, the substantial defect in material or workmanship attributable to Jayco;
3. Promptly schedule an appointment with and take the RV to an independent, authorized dealer of Jayco, or Jayco, for repairs; and
4. Pay any freight or transportation costs, import duties, fees and all incidental expenses associated with obtaining warranty service.

For warranty service simply contact one of Jayco's independent, authorized service centers for an appointment and then deliver your RV to the service center on the specified appointment date. If you need assistance you may contact Jayco, at 903 S. Main Street, P.O. Box 460, Middlebury, Indiana 46540, Attn: Customer Service, (574) 825-5861, (800) 283-8267 or www.jayco.com.

NOTE: Jayco does not control the scheduling of service work at the independent, authorized dealerships. You may encounter some delay in scheduling or completion of work. Also, you must notify the selling dealer at time of delivery to have work performed on any defect that occurred at the factory during manufacture at no cost to you as provided by this limited warranty. (See below under WHAT IS NOT COVERED).

If two (2) or more service attempts have been made to correct any covered defect that you believe impairs the value, use or safety of the RV, or if it has taken longer than thirty (30) days for those types of repairs to be completed, you must, to the extent permitted by law, notify Jayco directly, in writing, at the above address, of the unsuccessful repair(s) of the alleged defect(s) so that Jayco can become directly involved in making sure that you are provided service pursuant to the terms of this limited warranty.

**WHAT IS NOT COVERED**

By way of example only, this limited warranty does not cover any of the following: defects in materials, components or parts of the RV not attributable to Jayco; items that are added or changed after the RV leaves the possession of Jayco; additional equipment or accessories installed at any dealership, or other place of business, or by any other party, other than Jayco; any RV used for rental or other commercial purposes (Note: It shall be concluded that the RV has been used for commercial and/or business purposes if the RV owner or user files a tax form claiming any business or commercial tax benefit related to the RV, or if the RV is purchased, registered or titled in a business name); any RV sold or used outside the United States, U.S. Territories or Canada; any RV not used solely for recreational travel and camping; any RV purchased through auction or wholesale; any RV purchased from a dealer that is not an authorized dealer of Jayco; normal wear, tear or usage, such as tears, punctures, soiling, mildew, fading, or discoloration of exterior plastic or fiberglass, or soft goods, such as upholstery, drapes, carpet, vinyl, screens, cushions, mattresses and fabrics; the effects of condensation or moisture from condensation inside the RV or failure to provide adequate ventilation; mold or any damage caused by mold to the inside or outside of the RV; imperfections that do not affect the suitability of the RV for its intended purpose of recreational use or items that are working as designed but that you are unhappy with; problems, including water leaks, related to misuse, mishandling, neglect or abuse, including failure to maintain the RV in accordance with the owner's manual, or other routine maintenance such as inspections, lubricating, adjustments, tightening of screws and

fittings, tightening of lug nuts, sealing, rotating tires; damage due to accident, whether or not foreseeable, including any acts of weather or damage or corrosion due to the environment, theft, vandalism, fire, or other intervening acts not attributable to Jayco; service items such as windshield wiper blades, lubricants, fluids, filters, etc.; damage resulting from tire wear or tire failure; defacing, scratches, dents, chips on any surface or fabric of the RV; damage caused by off road use, overloading the RV or alteration of the RV, or any of its components or parts; wheel alignment or adjustments to axles when caused by improper maintenance, loading or damage from road hazards, including off road travel, wheel damage or balancing or damage from tire failures. Also, any costs associated with obtaining service, including by way of example, travel costs, are specifically excluded from the coverage of this warranty.

In addition, this limited warranty does not cover any material, component or part of the RV that is warranted by another entity, including, by way of example, handling, braking, wheel balance, muffler, tires, tubes, batteries, gauges, generator, hydraulic jacks, inverter, converter, microwave, television, DVD/CD player, radio, speakers, television, refrigerator, range, hot water heater, water pump, stove, carbon monoxide detector, smoke detector, propane detector, furnace or any air conditioner. (Note: The written warranty provided by the manufacturer of the component part is the direct responsibility of that manufacturer).

Defects and/or damage to interior and exterior surfaces, trim, upholstery and other appearance items may occur at the factory. These items are usually detected and corrected at the factory or by the selling dealer prior to delivery to the retail customer. You must inspect your RV for this type of damage when you take delivery. If you find any such defect or damage you must notify the selling dealer at time of delivery to have these items covered by this limited warranty and to have work performed on the items at no cost to you as provided by this limited warranty.

**EVENTS DISCHARGING JAYCO FROM OBLIGATION UNDER WARRANTY**

Certain things completely discharge Jayco from any obligation under this warranty and void it. By way of example, the following shall discharge Jayco from any express or implied warranty obligation to repair or replace any defect that results from: any rental or other commercial use or purchase of the RV (as defined in this warranty), any RV sold outside of, or used outside of, the United States, U.S. Territories or Canada, through an auction or wholesale or by a non-authorized dealer, any defect in a separately manufactured component part, owner neglect or failure to provide routine maintenance (See Owner's Manual), unauthorized alteration, off road use, collision or accident, whether or not foreseeable, including any acts of weather or damage or corrosion due to the environment, theft, vandalism, fire, explosions, overloading in excess of weight ratings, and tampering with any portion of the RV, or any use of the RV as a semi-permanent or permanent home.

**LEGAL REMEDIES**

Any action to enforce any portion of this limited warranty, or any implied warranty, shall be commenced within six (6) months after expiration of the warranty coverage period designated above. Any performance of repairs shall not suspend this limitation period from expiring. Any performance of repairs after the warranty coverage period has expired, or performance of repairs regarding anything excluded from coverage under this limited warranty shall be considered "good will" repairs, and they will not alter the express terms of this limited warranty, or extend the warranty coverage period or this limitation period. In addition, this warranty is not intended to extend to future performance, and nothing in this warranty, or any action of Jayco, or any agent of Jayco, shall be interpreted as an extension

of the warranty period or this limitation period. Some states do not allow a reduction in the statute of limitations, so this reduction may not apply to you.

**WARRANTY REGISTRATIONS**

Your warranty registration records should be completed and delivered to the manufacturers of component parts. The selling dealership will assist you in completing and submitting the Jayco product warranty registration form. That form must be returned to Jayco within ten (10) days of your taking delivery of the RV. Your Jayco warranty will not be registered unless this warranty registration is completed and received by Jayco. Failure to file this warranty registration with Jayco will not affect your rights under this limited warranty as long as you can present proof of purchase, but it can cause delays in obtaining the benefits of this limited warranty, and it may inhibit any servicing facility's ability to provide proper repairs and/or part replacement.

**CARE AND MAINTENANCE**

It is the owner's responsibility to perform proper care and maintenance of the RV, and to assure correct load distribution. For details regarding this, please see your Jayco owner's manual and the owner's manuals of the chassis manufacturer and other component part manufacturers. These outline various care and maintenance that is required to maintain your RV. Please review all manuals supplied with your RV, and contact your selling dealership or supplier of the component part if you have questions. Note: Failure to maintain the RV as noted in those manuals voids this limited warranty, and any damage to the RV as a result of your failure to perform such care, is not covered by this limited warranty.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.

**JAYCO, INC.**

903 S. Main Street * P.O. Box 460 * Middlebury, IN 46540
Telephone: 574-825-5861 or 800-283-8267

## Notice To Jayco Dealers

This Owner's Manual contains the Towable Limited Warranty that applies to this RV. However, if the Jayco dealer decides to use this RV for rental purposes, then the Towable Limited Warranty will not apply to this RV. The Towable Limited **Rental** Warranty applies in that situation.

If, on the other hand, the Jayco dealer sells this RV to a retail customer then the rental warranty would not be applicable. **The rental warranty does not apply to retail consumers.**

Jayco's rental program is applicable to the following product lines:

- □ Jay Series Camping Trailers
- □ Jay Series Sport Camping Trailers
- □ Jay Feather Ultra Lite EXP Travel Trailers
- □ Jay Feather Ultra Lite SLX Travel Trailers
- □ White Hawk Travel Trailers
- □ Jay Flight Travel Trailers
- □ Jay Flight SLX Travel Trailers
- □ Jay Flight Bungalow Travel Trailers

- □ Jay Flight DST
- □ Eagle Travel Trailers
- □ Eagle Fifth Wheels
- □ Eagle HT Fifth Wheels
- □ Eagle Premier FW
- □ Designer FW
- □ Pinnacle Fifth Wheels
- □ Octane Toy Haulers
- □ Seismic Fifth Wheel Toy Haulers

If you have any questions regarding this, please contact Jayco Customer Service at (800) 283-8267 or (574) 825-0608.

## JAYCO TOWABLE RENTAL LIMITED WARRANTY

### WHAT AND WHO IS COVERED

The Jayco warranty covers this recreational vehicle ("RV"), when used only for recreational travel and camping, including recreational travel and camping by renters of the Dealer, for one (1) year. This limited warranty applies to the original Dealer only, and it is not transferable. The warranty period begins on the date that Dealer first places the RV in rental service. In the event that a substantial defect in material or workmanship, attributable to Jayco, is found to exist during the warranty period, Jayco will reimburse the Dealer either the reasonable costs of repair or the reasonable costs of replacement of the defect, (Jayco's option), in accordance with the terms, conditions and limitations of this limited warranty.

Jayco's obligation to reimburse Dealer for the reasonable costs of repair or replacement of defective materials or workmanship is the sole obligation of Jayco under this limited warranty. Jayco reserves the right to use new or remanufactured parts of similar quality to complete any work, and to make parts and design changes from time to time without notice to anyone. Jayco reserves the right to make changes in the design or material or its products without incurring any obligation to incorporate such changes in any product previously manufactured. Jayco makes no warranty as to the future performance of this RV, and this limited warranty is not intended to extend to the future performance of this RV, or any of its materials, components or parts. In addition, the Dealer's obligation to notify Jayco, of a claimed defect does not modify any obligation placed on the Dealer to contact Jayco directly when attempting to pursue remedies under state or federal law.

### LIMITATIONS, EXCLUSIONS AND DISCLAIMER OF IMPLIED WARRANTIES

**ANY IMPLIED WARRANTY THAT IS FOUND TO ARISE BY WAY OF STATE OR FEDERAL LAW, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR ANY IMPLIED WARRANTY OF FITNESS, IS LIMITED IN DURATION TO THE DURATION OF THIS LIMITED WARRANTY AND IS LIMITED IN SCOPE OF COVERAGE TO THE SCOPE OF COVERAGE OF THIS LIMITED WARRANTY.**

Jayco makes no warranty of any nature beyond that contained in this limited warranty. Jayco does not authorize any person to create any other obligation or liability for it regarding this RV, and Jayco is not responsible for representation, promise or warranty made by any dealer or other person beyond what is expressly stated in this limited warranty, and

no one has the authority to enlarge, amend or modify this limited warranty. Any selling or servicing dealer is not Jayco's agent, but an independent entity.

**JAYCO SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES THAT MAY RESULT FROM BREACH OF THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY. THIS EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES SHALL BE INDEPENDENT OF ANY FAILURE OF THE ESSENTIAL PURPOSE OF ANY WARRANTY, AND THIS EXCLUSION SHALL SURVIVE ANY DETERMINATION THAT THIS LIMITED WARRANTY OR ANY IMPLIED WARRANTY HAS FAILED OF ITS ESSENTIAL PURPOSE.**

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

**HOW TO GET SERVICE**

To obtain reimbursement of warranty service the owner must do all of the following:

Notify Jayco of the substantial defect in material or workmanship attributable to Jayco, within the warranty coverage period;

1. Provide the notification mentioned in (1), above, within ten (10) days of when the owner discovered, or should have discovered, the substantial defect in material or workmanship attributable to Jayco;
2. Promptly and appropriately make the necessary repairs; and
3. Pay any freight or transportation costs, import duties, fees and all incidental expenses associated with obtaining warranty service.

If you need assistance you may contact Jayco, at 903 S. Main Street, P. O. Box 460, Middlebury, Indiana, 46540, Attn: Customer Service (574) 825-5861, (800) 283-8267 or www.jayco.com. Also, you must notify Jayco within three (3) days of delivery to you to have work performed on any defect or damage to appearance items that occurred at the factory during manufacturer or during delivery at no cost to you as provided by this limited warranty. (See below under WHAT IS NOT COVERED).

If two (2) or more service attempts have been made to correct any covered defect that you believe impairs the value, use or safety of the RV, or if it has taken longer than thirty (30) days for those types of repairs to be completed, you must, to the extent permitted by law, notify Jayco directly, in writing, at the above address, of the unsuccessful repair(s) of the alleged defect(s) so that Jayco can become directly involved in making sure that you are provided service pursuant to the terms of this limited warranty.

**WHAT IS NOT COVERED**

By way of example, only, this Limited Warranty does not cover any of the following: defects in materials, components or parts of the RV not attributable to Jayco; items that are added or changed after the RV leaves the possession of Jayco; additional equipment or accessories installed at any dealership, or other place of business, or by any other party, other than Jayco; any RV not used solely for recreational travel and camping; all soft goods, normal wear, tear or usage, such as tears, punctures, soiling, mildew, fading, or discoloration of exterior plastic, fiberglass, upholstery, drapes, carpet, vinyl, screens,

cushions, mattresses and fabrics; the effects of condensation or moisture from condensation inside the RV and failure to provide adequate ventilation; mold or any damage caused by mold to the inside or outside of the RV; imperfections that do not affect the suitability of the RV for its intended purpose of recreational use or items that are working as designed but that you are unhappy with; problems related to misuse, mishandling, neglect or abuse, including failure to maintain the RV in accordance with the owner's manual, or other routine maintenance such as inspections, lubricating, adjustments, tightening of screws, tightening of lug nuts, sealing, rotating tires; damage due to accident, whether or not foreseeable, including any acts of weather or damage or corrosion due to the environment, theft, vandalism, fire, or other intervening acts not attributable to Jayco; service items such as windshield wiper blades, lubricants, fluids, filters, etc.; damage resulting from tire wear or tire failure; defacing, scratches, dents, chips on any surface or fabric of the RV; damage caused by off road use, overloading the RV or alteration of the RV, or any of its components or parts.

In addition, this limited warranty does not cover any material, component or part of the RV that is warranted by another entity, including, by way of example, handling, braking, wheel balance, muffler, tires, tubes, batteries, gauges, generator, hydraulic jacks, inverter, converter, microwave, television, DVD/CD player, radio, speakers, television, refrigerator, range, hot water heater, water pump, stove, carbon monoxide detector, smoke detector, propane detector, furnace or any air conditioner. (Note: the written warranty provided by the manufacturer of the component part is the direct responsibility of that manufacturer).

Defects and/or damage to interior and exterior surfaces, trim, upholstery and other appearance items may occur at the factory or during delivery of the RV to you. These items are usually detected and corrected at the factory. You must inspect the RV for this type of damage when you take delivery from Jayco. If you find any such defect or damage you must notify Jayco within three (3) days of delivery of the RV to you to have these items covered by this limited warranty and to have work performed on the items covered by this limited warranty.

**EVENTS DISCHARGING JAYCO FROM OBLIGATION UNDER WARRANTY**

Certain things completely discharge Jayco from any obligation under this warranty and void it. By way of example, the following shall discharge Jayco from any express or implied warranty obligation to repair or replace any defect that results from: any defect in a separately manufactured component part, any neglect or failure to provide routine maintenance by you or anyone you rent the RV to (See Owner's Manual), unauthorized alteration, off road use, collision or accident, whether or not foreseeable, including any acts of weather or damage or corrosion due to the environment, theft, vandalism, fire, explosions, overloading in excess of weight ratings, and tampering with any portion of the RV.

**LEGAL REMEDIES**

Any action to enforce any portion of this limited warranty, or any implied warranty, shall be commenced within six (6) months after expiration of the warranty coverage period designated above. Any performance of repairs shall not suspend this limitation period from expiring. Any performance of repairs after the warranty coverage period has expired, or performance of repairs regarding any thing excluded from coverage under this limited warranty shall be considered "good will" repairs, and they will not alter the express terms of this limited warranty, or extend the warranty coverage period or this limitation period. In

addition, this warranty is not intended to extend to future performance, and nothing in this warranty, or any action of Jayco, or any agent of Jayco, shall be interpreted as an extension of the warranty or this limitation period. Some states do not allow a reduction in the statute of limitations, so this reduction may not apply to you.

**WARRANTY REGISTRATIONS**

Your warranty registration records should be completed and delivered to the manufacturers of component parts. The Jayco product warranty registration form must be returned to Jayco within ten (10) days of your taking delivery of the RV. Your Jayco warranty will not be registered unless this warranty registration is completed and received by Jayco. Failure to file this warranty registration with Jayco will not affect your rights under this limited warranty as long as you can present proof of purchase, but it can cause delays in obtaining the benefits of this limited warranty, and it may inhibit any servicing facilities' ability to provide proper repairs and/or part replacement.

**CARE AND MAINTENANCE**

It is your responsibility to perform proper care and maintenance of the RV, and to assure correct load distribution. For details regarding this, please see your Jayco owner's manual and other component part manufacturers. These outline various care and maintenance that is required to maintain your RV. Please review all manuals supplied with the RV, and contact Jayco or the supplier of the component part if you have questions. Note: failure to maintain the RV as noted in those manuals voids this limited warranty, and any damage to the RV as a result of your failure to perform such care, is not covered by this limited warranty.

**THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS THAT VARY FROM STATE TO STATE.**

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## *Secondary Means of Escape (Exit Window)*

Your recreation vehicle has been equipped with a window(s) that serves as a secondary means of escape. The window(s) will allow a quick exit from the vehicle during an emergency if access to the main entrance door is not available. Its red latches and label easily identify it.

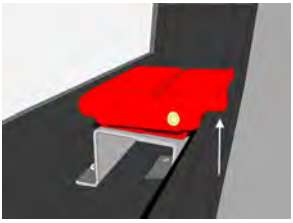
Do not remove the label listed below from its location at the exit window:

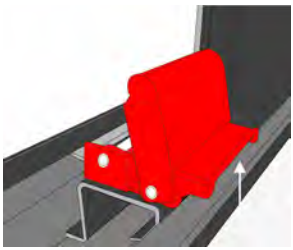
**Exit Window Label**

When parking your recreation vehicle, make sure the egress window is not blocked by trees or other obstacles. Make sure the ground below the window is solid and can be used as an escape path.

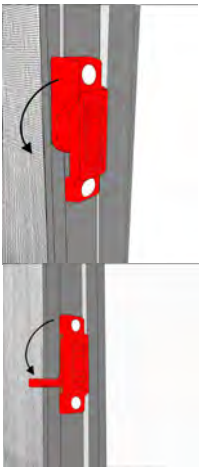
Practice opening the window before an emergency occurs, and make sure all occupants know how to operate it:

**The egress window(s) must be locked during transit.**
Your recreation vehicle may be equipped with one of the following exit window styles.

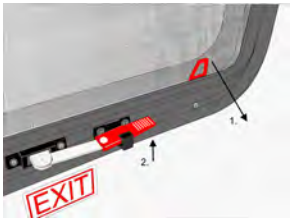




**Flip latch style: (2 per window)**
Push up on the front lip of the latch (upper arrow) and the latch unfolds.
Push up on the front lip of the latch again (lower arrow) to unhook the latch from the window.
When both latches are unhooked, push out on the window which is hinged at the top. Exit the vehicle.
The screen does not need to be removed from the window.



**Slider window latch style:**
Pull the lever down to unlock the window. Slide the window to the right to open and exit the vehicle. The screen does not need to be removed from the window.



**Lever style latch:**
Remove the screen by pulling the red tab (upper right arrow). Pull the lever out from the sash clamps. Swing the lever out so it is positioned straight out from the window. Push the lever (and window) out to open and exit the vehicle.

## *Fire Safety*

If a fire does start, follow these basic safety rules:

1. Have everyone evacuate the vehicle immediately.
2. After everyone is clear and accounted for, check the fire to see if you can attempt to put it out.
3. If it is large, or the fire is fuel-fed, get clear of the vehicle and have the Fire Department handle the emergency.
4. Do not attempt to use water to put out the fire. Water can spread some types of fire, and electrocution is possible with an electrical fire.

Refer to the following sections for additional fire safety information.

- **Electrical Systems**, In case of an electrical fire.
- **Appliances**, In case of a grease fire.

## Fire Extinguisher

Fire extinguishers are classified and rated by fire type, A, B and C. These classifications identify the kinds of fires or burning materials they are designed to fight.

**Class A -** Solid materials such as wood, paper, cloth, rubber and some plastics.

**Class B -** Liquids such as grease, cooking oils, gasoline, kerosene or other flammable liquids.

**Class C -** Electrical such as electrical wires or other live electrical equipment.

A dry chemical fire extinguisher has been installed by the entrance door. It is suitable for extinguishing small fires of the Class B or C type only.

We suggest you become thoroughly familiar with the operating instructions displayed on the side of the fire extinguisher.

**NOTE:** For information on how to use your fire extinguisher, refer to the fire extinguisher user's manual provided by the fire extinguisher manufacturer.

**Inspection and maintenance**

Read and follow all instructions on the label and user's manual provided by the fire extinguisher manufacturer.

- □ Inspect the extinguisher at least once a week (more frequently if it is exposed to weather or possible tampering). This should also be done before beginning a vacation or during an extended trip.

**⚠ WARNING**

Do not check the pressure, test or practice using the fire extinguisher by squeezing the trigger, even briefly. The fire extinguisher is not rechargeable or refillable. Once used, it will gradually lose pressure and will not be fully charged for use in an emergency.

**⚠ DANGER**

Do not turn the electrical power back on or plug in any appliances after the use of a fire extinguisher. Please refer to the fire extinguisher's user manual for further instructions on maintenance and clean up.

## Smoke Alarm

Some of the most common fire safety issues are burning candles, smoking in bed, leaving children unattended and cleaning with flammable fluids. The smoke detector is intended to help reduce those risks.

Your vehicle is equipped with a smoke alarm that is listed for use in Recreation Vehicles.

They are not fool proof. Smoke alarms only work if they are operational and maintained. **Be sure to read, understand and follow the user information provided from the manufacturer of the smoke alarm, including information regarding the limited life of smoke alarms.**

Please be aware the smoke alarm cannot detect fires if the smoke does not reach it. Anything preventing smoke from reaching the alarm may delay or prevent an alarm (i.e., a closed door may prevent smoke from reaching an alarm on the other side of the door, etc.).

**⚠ WARNING**

This smoke alarm will not alert hearing impaired residents. Special alarms with flashing strobe lights are recommended for the hearing impaired

There are instances when the smoke detector alarm may not be heard. Though the alarm horn in this detector meets or exceeds current UL standards, it may not be heard for many reasons. These include (but not limited to): a closed or partially closed door, the alarm may be drowned out by other noise like the TV, stereo, traffic, weather, air conditioner or other appliances.

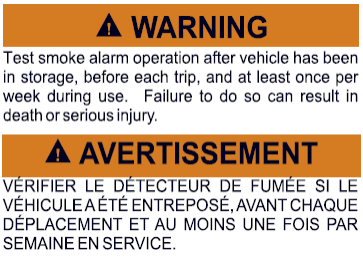
**Operation**

The smoke alarm is operational once the battery is correctly installed. The LED light will indicate the battery is functioning properly. When the production of combustion is sensed, the smoke detector sounds a loud alarm that continues until the air is cleared. The LED light will also give a visual indication of a sounding alarm.

**How to test**

Stand at arm's length from the smoke alarm when testing as the alarm horn may be harmful to your hearing. The alarm horn is loud to alert you to an emergency. The test button will accurately test all functions. Never use an open flame from a match or lighter to test this smoke alarm.

A warning label is located near the smoke alarm Please do not remove the following label from your recreation vehicle:


⚠ WARNING
Test smoke alarm operation after vehicle has been in storage, before each trip, and at least once per week during use. Failure to do so can result in death or serious injury.
⚠ AVERTISSEMENT
VÉRIFIER LE DÉTECTEUR DE FUMÉE SI LE VÉHICULE A ÉTÉ ENTREPOSÉ, AVANT CHAQUE DÉPLACEMENT ET AU MOINS UNE FOIS PAR SEMAINE EN SERVICE.

**Smoke detector warning label**

**⚠ WARNING**

Test the smoke alarm operation after the vehicle has been in storage, before each trip and at least once per week during use. Do not disconnect the battery or the alarm.

**Maintenance**

Gently vacuum off any dust on the cover of the smoke alarm with your vacuum's soft brush attachment. Test the smoke alarm once you have vacuumed. Never use water, cleaners or solvents to clean the smoke alarm as they may damage the smoke alarm. Do not paint the smoke detector. For information on how to maintain your smoke detector, refer to the smoke detector user's guide.

**Battery**

The smoke alarm will not function if the battery is missing, disconnected, dead, the wrong type of battery is used or the battery is not installed correctly. The smoke detector requires one standard 9V battery.

When the battery becomes weak, the smoke alarm will "beep" about once a minute (the low battery warning). This low battery warning should last for 30 days, but you should replace the battery immediately to continue your protection.

When the battery is removed from the alarm, the battery flag in the compartment will pop up; therefore, the alarm cannot be installed to the mounting bracket without a battery.

**⚠ WARNING**

Only use the replacement battery recommended by the smoke detector manufacturer. The smoke detector alarm may not operate properly with other batteries. Never use a rechargeable battery as it may not provide a constant charge. Never disconnect the battery to silence the alarm.

Regardless of the manufacturer's suggested battery life, you MUST replace the battery once the smoke alarm starts "beeping" (the low battery warning). For information on the correct battery and battery installation for your smoke detector, refer to the smoke detector user's guide.

**Replacement**

Smoke alarms have a limited life and are not foolproof. Smoke alarms will wear out over time like any appliance. Always replace the detector immediately if it is not working properly, it displays any type of problem, or within five years of use. Refer to the smoke detector manufacturer's user guide for additional information.

## *Combination Carbon Monoxide / Propane Alarm*

Your RV is equipped with a combination carbon monoxide (CO)/propane alarm that is listed for use in recreation vehicles. The combination carbon monoxide/ propane alarm will only work if it is operational and maintained.

## ⚠ WARNING

The carbon monoxide detector installed is intended for use in ordinary indoor locations of recreation vehicles. It is not designed to comply with Occupational Safety and Health Administration (OSHA) commercial or industrial standards.

Do not disconnect the battery or the alarm.

Individuals with medical problems may consider using warning devices that provide audible and visual signals for carbon monoxide concentrations under 30 PPM.

This alarm will only indicate the presence of carbon monoxide gas at the sensor. Carbon monoxide gas may be present in other areas.

The ultimate responsibility for protection against toxic carbon monoxide fumes rests solely on you. Installing a carbon monoxide/propane alarm is just the first step in protecting your family from toxic carbon monoxide poisoning

The alarm is wired directly to the RV 12-volt electrical system, with continuous power being supplied by the RV battery. There is no 9-volt battery power supply in the carbon monoxide/propane alarm. If the battery cable is disconnected at the battery terminals, the combination alarm will not work.

Be sure to read, understand and follow the owner's information from the manufacturer of the combination CO/propane alarm that has been supplied in your Warranty Packet. This includes information regarding the limited life of the alarm.

Carbon monoxide (CO) is an insidious poison. It is a colorless, odorless and tasteless gas. Many cases of reported carbon monoxide poisoning indicate while victims are aware they are not feeling well, they become so disoriented they are unable to save themselves by either exiting the vehicle or calling for assistance. Young children and household pets may be the first affected.

## ⚠ WARNING

The following symptoms are related to carbon monoxide poisoning and should be discussed with all members of the household:

**Mild exposure:** Slight headache, nausea, vomiting, fatigue (often described as "flu-like" symptoms).

**Medium exposure:** Severe throbbing headaches, drowsiness, confusion, fast heart rate.

**Extreme exposure**: Unconsciousness, convulsions, cardio-respiratory failure, death.

Your combination carbon monoxide/propane alarm is designed to detect the toxic carbon monoxide fumes that result from incomplete combustion, such as those emitted from appliances, furnaces, fireplaces and auto exhaust. A carbon monoxide/propane alarm

is **NOT A SUBSTITUTE** for other combustible gas, fire or smoke alarms. This carbon monoxide alarm is designed to detect carbon monoxide gas from ANY source of combustion. It is not designed to detect smoke, fire or any other gas. Please note that there are hazards against which carbon monoxide detection may not be effective, such as natural gas leaks or explosions.

This alarm is designed to sense the presence of carbon monoxide/propane gas, however there are other combustible fumes or vapors that may be detected by the sensor including (but not limited to ): acetone, alcohol, butane and gasoline.

These chemicals can be found in commonly used items such as deodorants, colognes, perfumes, adhesives, lacquer, kerosene, glues, wine, liquor, most cleaning agents and the propellants of aerosol cans.

High temperatures can activate glue and adhesive vapors. If you close up a recreation vehicle on a hot day, the chemicals used in its construction may be detected for months after **THE VEHICLE WAS CONSTRUCTED (FOR MORE INFORMATION, REFER TO SECTION 2, FORMALDEHYDE).**

**⚠ WARNING**

Actuation of this detector indicates the presence of carbon monoxide which can kill you.

**What you should do if the alarm sounds**

1. Operate the RESET/SILENCE button.
2. Call your emergency services (fire department or 911).
3. Immediately move to fresh air (outdoors or by an open door or window)
4. Do not re-enter the premises or move away from the open door or window until the emergency service responders have arrived, the premises have been aired out, and your alarm remains in its normal condition.

If your alarm reactivates within a 24-hour period, repeat steps 1-4 and call a qualified appliance technician to investigate for sources of carbon monoxide from fuel burning equipment and appliances, and inspect for proper operation of this equipment. Make sure that motor vehicle(s) are not, and have not been, operating in an attached garage or adjacent to the RV.

If problems are identified during this inspection, have the alarm serviced immediately. Note any combustion equipment not inspected by the technician and consult the manufacturer's instructions or contact the manufacturer directly for more information about carbon monoxide safety and this alarm.

**⚠ WARNING**

Never turn the 12-volt battery disconnect control to the off position and disconnect the battery cable to silence an alarm. The alarm will automatically sense when the level of carbon monoxide in the air reaches below dangerous levels. You should stay outside the vehicle in fresh air until the alarm is silenced. When the alarm sounds, do not stand too close to the alarm. The sound produced by the alarm is loud because it is designed to wake a person in an emergency. Prolonged exposure to the alarm at a close distance may be harmful to your hearing.:

**Alarm Signals**

- □ Normal Operation: The LED will maintain a steady green light, indicating that the alarm is powered.
- □ CO alarm condition: The red LED light will remain steady and the alarm will sound 4 "BEEPS" then silent for 5 seconds. These signals indicate immediate action is required.
- □ Propane gas alarm: The red LED light will flash and the alarm will sound a steady tone. These signals indicate immediate action is required.
- □ Alarm malfunction/low battery: The gas LED will remain off and the Operational/CO LED will alternate re/green and the alarm will sound once every 15 seconds.
- □ End of life alarm: The LED will flash red/red, green/green and the alarm will "BEEP every 25-30 seconds. The alarm should be immediately replaced.

**Maintenance**

Vacuum the alarm cover at least once a year. Clean the cover by hand using a cloth dampened in clean water. Dry with a soft cloth. Do not spray the front panel of the alarm with cleaning agents or waxes. This action may damage the sensor causing an alarm or cause the alarm to malfunction. Do not paint the face of the alarm.

**Testing the combination carbon monoxide/ propane alarm**

**⚠ WARNING**

Test the alarm operation after the RV has been in storage, before each trip and at least once per week during use.

The TEST/RESET button tests all ELECTRICAL functions of the alarm. The TEST/Mute switch is located on the front of the alarm. Press and hold the test button for 1 second. The alarm is working properly if the GREEN indicator light changes color to RED and the horn beeps 4 times. The Gas LED should also blink red.

**NOTE:** Pressing the test button does not check the sensor operation. Refer to the carbon monoxide/propane alarm manufacturers user's manual provided in the Warranty Packet for additional information on testing the sensors.

Repair or replace the combination carbon monoxide/propane alarm when the alarm no longer functions. As with any electronic product, it has a limited life. Alarms that do not work cannot protect you.

**NOTE:** The carbon monoxide/propane alarm manufacturer strongly recommends replacement of the detector five years after the date of purchase.

Refer to the Warranty Packet for more information from the carbon monoxide/ propane alarm manufacturer.

DO NOT PAINT
POWER/PUISSANCE
FAULT/DEFAULT
Chirp every 40 seconds
Bip toutes les 40 secondes
RESET
TEST
See Owner's Manual / Voir le manuel de l'utilisateur
PROPANE
CARBON MONOXIDE
CARBONE MONOXYDE
4 beeps in 1 second followed by 5 seconds of silence
4 bips on 1 second suivis de 5 secondes de silence
ALARM/ALARME
Move to Fresh Air, Call 911 / Allez respirer de l'air frais à l'extérieur, appelez le 911
Atwood
CAUTION! ADDITIONAL INSTRUCTIONS ON BACK. DISCONNECT POWER.

**LPCO Detector**

## *Formaldehyde*

Some components in the recreation vehicle contain formaldehyde-based adhesives that may release formaldehyde fumes into the air for an unknown period of time. Individuals who are allergic to formaldehyde gas fumes may experience irritation to eyes, ears, nose and throat. Indoor air quality may also be affected by leaving your vehicle closed for a period of time.

To aid in dissipation, ventilate the recreation vehicle by opening all windows and circulate the air with a fan.

The following label is located inside the vehicle near the entry door. The label should be left permanently affixed to the recreation vehicle:

CAUTION
Product in this vehicle may contain formaldehyde, which may be an irritant to you. You may experience a greater concentration during high humidity and temperatures. Ventilate to remove. Consult your owner's manual for additional information.
0192523
DO NOT REMOVE THIS LABEL

**Formaldehyde label**

## Extended Or Full Time Usage

Your new recreation vehicle has been built for enjoyment in a recreational manner. It is not intended for use as full-time quarters or a permanent residence. Continuous living in your vehicle could cause accelerated wear and damage to the various components.

**⚠ CAUTION**

Continuous or permanent living in your recreation vehicle may affect your warranty coverage and may void the "Limited Warranty" applicable to your vehicle.

## Cold Weather Usage

When used in freezing or below freezing temperatures, the following precautions need to be taken:

- □ Proper care should be taken with the fresh water and drainage systems to avoid freeze-ups.
- □ Propane gas (if so equipped) and sufficient power is needed for protection from possible freeze-ups on the propane gas regulator. Keep in mind that more frequent furnace operation will substantially increase battery draw and propane gas use.
- □ During cool weather usage, ventilation or addition of a dehumidifier may be required to reduce condensation.
- □ Check outside extrusions on compartment doors, locks, slide outs, windows, vents, etc., for frozen moisture before operating to avoid damage to parts.

## Condensation

**⚠ WARNING**

Condensation should be taken seriously. Ignoring it can damage the recreation vehicle (damage caused by condensation is not warrantable), and more importantly could lead to mold or mildew issues which could be a health hazard.

Condensation is a natural phenomenon. The amount of condensation will vary with climate conditions, particularly the relative humidity.

**To reduce condensation**

Proper ventilation and, if needed, the use of a dehumidifier (customer supplied) will assist in controlling condensation. Many RV and marine dealers carry small dehumidifiers sized for RV use. Other suggestions are:

- □ Crack open windows and roof vents to allow warm moist air to escape.
- □ When taking a shower open the bath roof vent (if so equipped) approximately ½" allowing the moisture to escape.
- □ Use the range hood fan (if so equipped) when cooking or washing dishes.
- □ Avoid hanging wet towels (or clothes) inside the RV to dry.

- □ If condensation is found in cabinets or closets, open those doors slightly to equalize the temperature and provide ventilation.

Uncontrolled condensation can cause dampness, mildew, etc., inside your RV. Be sure to make strong effort to control condensation. Repairs due to condensation are not covered under the terms of the Limited Warranty or the Extended Limited Warranty.

Notes:

## Tow Vehicle

If you plan to tow your RV with a tow vehicle you already own, contact your automotive dealer to find out your vehicle towing capacity. If you plan to purchase a new tow vehicle, be certain to tell your automotive dealer the GVWR, size and type of RV that you will be towing (some tow vehicles can be purchased with an optional tow package). As a minimum requirement, the Gross Vehicle Weight Rating (GVWR) of your RV must not exceed your tow vehicle's towing rating.

Some automotive manufacturers publish brochures that discuss towing considerations. Ask your automotive dealer how to obtain a copy of this information. If applicable, verify if the brochure ratings are listed "with" or "without" an optional tow package.

## Vehicle Labels

Decals and data plates used throughout the RV aid in its safe and efficient operation; others give service instructions.

Read all decals, data and instruction plates before operating your RV. If any decal, data or instruction plate is painted over, damaged or removed, it should be replaced.

Keep a record of the 17-digit vehicle identification number (VIN), the 8-digit serial number and your license number in the event theft or vandalism requires you to supply this information to the authorities.

**⚠ WARNING**

The factory-installed weight labels are specific to the recreation vehicle for which they are supplied and are not interchangeable. Do not remove these labels from your RV. If labels are missing contact your dealer or Jayco Customer Service for replacements.

## Weight Terms

**GAWR - GROSS AXLE WEIGHT RATING** – The value specified by the vehicle manufacturer as the load-carrying capacity of a single axle system, as measured at the tire-to-ground interfaces. This is the total weight a given axle is capable of carrying.

**GCWR - GROSS COMBINED WEIGHT RATING** – The value specified by the trailer manufacturer as the maximum allowable loaded weight of the trailer including full propane cylinders, a full load of water, and full generator fuel if applicable.

**GVWR - GROSS VEHICLE WEIGHT RATING** – The value specified by the manufacturer as the maximum permissible weight of the fully loaded trailer.

**OCCC - OCCUPANT AND CARGO CARRYING CAPACITY** - Is equal to the GVWR of the trailer, minus the weight of the trailer (as completed at the factory) minus the weight of all personal cargo, and, if applicable, minus the weight of a full tank (or tanks) of propane and the full weight of potable water, including the water heater (if so equipped). Additions to or other changes made to the trailer after it left the factory will affect (reduce) the OCCC.

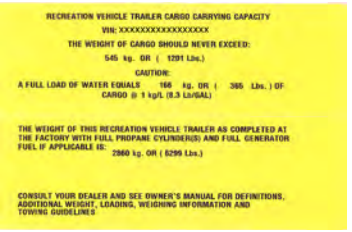
**UVW - UNLOADED VEHICLE WEIGHT** – The weight of the trailer as manufactured at the factory with the weight of a full tank (or tanks) of propane.

## Weight and Capacity Labels

There are 3 main types of labels that can be found on the exterior of the trailer, usually on the roadside front corner of the trailer. Labels at this location will be a Federal Certification label, an Occupant & Cargo Carrying Capacity label, and a Tire and Loading Information label. An additional Occupant & Cargo Carrying Capacity label is also located on the inward surface of the entry door.

**OCCC Label (Occupant & Cargo Carrying Capacity)**

This label is yellow in color and has two parts.


RECREATION VEHICLE TRAILER CARGO CARRYING CAPACITY
VIN: XXXXXXXXXXXXXXXXX
THE WEIGHT OF CARGO SHOULD NEVER EXCEED:
545 kg. OR ( 1291 Lbs.)
CAUTION:
A FULL LOAD OF WATER EQUALS 160 kg. OR ( 385 Lbs. ) OF CARGO @ 1 kg/L (8.3 Lb/GAL)
THE WEIGHT OF THIS RECREATION VEHICLE TRAILER AS COMPLETED AT THE FACTORY WITH FULL PROPANE CYLINDER(S) AND FULL GENERATOR FUEL IF APPLICABLE IS: 2860 kg. OR ( 6295 Lbs.)
CONSULT YOUR DEALER AND SEE OWNER'S MANUAL FOR DEFINITIONS, ADDITIONAL WEIGHT, LOADING, WEIGHING INFORMATION AND TOWING GUIDELINES

OCCC Label (yellow)

The upper portion of this label is the maximum Occupant & Cargo Carrying Capacity that may be placed in or on the trailer as it was manufactured and weighed before leaving the factory. This maximum capacity would not include the weight of a full fresh water tank. The full load of water weight would need to be subtracted from the maximum cargo weight. Additions or other changes made to the trailer after it leaves the factory will affect (reduce) the OCCC.

The lower portion of this label indicates the weight value of the trailer as it was manufactured and weighed at the factory. It includes full propane tanks and full generator fuel (if so equipped).

You may question the total weight capacity of the tires on your RV being less than the GVWR; this is correct. In order to calculate the actual weight on the RV tires, do not include the tongue weight. The tongue weight is actually being carried by your tow vehicle, not the RV tires.

For example: If the tires are rated at 2,000 lbs. each x 4 tires = 8,000 lbs. and the RV has a GVWR of 9,000 lbs. with a tongue weight of 1,200 lbs. The actual weight on the RV tires is (9,000 – 1,200) which equals 7,800 lbs. which is within the weight rating of the tires.

If you have further questions, please contact your dealer or Jayco Customer Service.

**Federal Certification Label:**

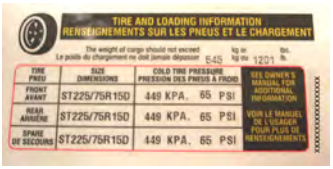
The Federal Certification Label is required by the government to verify the trailer complies with all motor vehicle standards for Canada and the United States. It includes the following information: Manufacturer name, VIN, GVWR, GAWR (front/rear), tire & rim sizes and cold tire inflation pressures.

* XXXXXXXXXXXXXXXXX *
Jayco, Inc.

Federal Certification Label

**Tire and Loading Label:**

The Tire and Loading Label provides information on the tire sizes, cold tire inflation pressures, the VIN and maximum cargo capacity. The maximum cargo capacity listed on the label does not include the weight of a full load of water.


TIRE AND LOADING INFORMATION
RENSEIGNEMENTS SUR LES PNEUS ET LE CHARGEMENT

| TIRE PNEU | SIZE DIMENSIONS | COLD TIRE PRESSURE PRESSION DES PNEUS À FROID | |
|---|---|---|---|
| FRONT AVANT | ST225/75R15D | 448 KPA, 65 PSI | SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION |
| REAR ARRIÈRE | ST225/75R15D | 448 KPA, 65 PSI | VOIR LE MANUEL DE L'USAGER POUR PLUS DE RENSEIGNEMENTS |
| SPARE DE SECOURS | ST225/75R15D | 448 KPA, 65 PSI | |

Tire & Loading Information

## Loading Your RV

**⚠ WARNING**

Never load the RV in excess of the GAWR for either axle. Overloading your RV may result in adverse handling characteristics and damage to the chassis.

**⚠ WARNING**

Your recreation vehicle's load capacity is designated by weight, not by volume, so you cannot necessarily use all available space when loading the vehicle. Do not exceed your GVWR and ensure you are loading the vehicle as evenly as you can for the best possible handling. Ensure heavy items are secured so they do not shift during travel.

**⚠ WARNING**

**DO NOT EXCEED YOUR GVWR!** This means you should weigh your RV as loaded for your normal travel to determine the actual weight. If you exceed the GVWR, you **MUST** remove items from the RV, or drain liquids, then re-weigh the vehicle to ensure you have achieved a safe weight. Do not travel with full grey/black holding tanks. This not only wastes gas but, depending upon the location of the grey or black holding tanks, can affect handling characteristics.

**⚠ WARNING**

Store items in areas designated for storage. Do not store anything in the areas reserved for the converter, electrical panels or the furnace or water heater, etc.

Store and secure all loose items inside the RV before traveling. Overlooked items such as canned goods, or small appliances on the countertop, cooking pans on the range or free-standing furniture items can become dangerous projectiles during a sudden stop.

Distribute cargo side-to-side so the weight on each tire does not exceed one-half of the GAWR for either axle. For traveling safety, it is important to make sure any tie down straps (if so equipped) on appliances or furniture are secure.

## Cargo Carrying Accessory Receiver (If So Equipped)

**⚠ WARNING**

**Receiver is for cargo carrying accessories ONLY. DO NOT tow any trailer or other vehicle.** Use for towing or exceeding load limit will void the warranty. Failure to follow the instructions can cause the carrier to collapse or items to fall which could cause an accident resulting in death or serious injury.

## Rear Bumper

**⚠ CAUTION**

Do not add items to the RV rear bumper. Add-on items will eventually damage your bumper. Damage caused by such aftermarket equipment installation or improper loading voids the **Towable Limited Warranty.**

The rear bumper of your RV is not designed to carry cargo. Items that extend beyond the bumper OR weigh over 100 lbs. (45kg) will place undo strain on the bumper.

The 100 lb. bumper capacity includes the weight of the spare tire that may have been attached at the factory.

**NOTE:** Some items may fall within the given weight range, (like bike racks) however, they can still cause damage. Over time, weight added to the bumper will cause damage from the motion created while traveling. In addition, extra weight behind the axle may reduce the hitch weight (leading to adverse handling conditions from wind gusts and/or passing traffic

## Fifth Wheel Pin Box (Customer Supplied)

Hitch selection is important because it affects the towing and handling characteristics of your RV. There are many kinds of hitches available for various uses and assuring that you have the correct hitch installed is critical to a safe towing experience.

Ask your dealer about the proper class and type of hitch you need to purchase for your individual tow vehicle/RV combination. A fifth wheel requires a pin box hitch bolted directly to the floor of the truck box through the frame.

The hitch manufacturer assigns a hitch class rating based on the capacity that hitch has for towing and a weight classification. The weight classification is determined from the hitch's weight carrying capacity (the pin box weight on a fifth wheel). Before selecting a hitch, you must know your GVWR and pin box rating. The rating of the hitch package purchased should be equal to or greater than the RV's GVWR and the pin box rating.

**The rating of the hitch package purchased should be equal to or greater than the RV's GVWR and pin box rating.**

**⚠ CAUTION**

Using an oversized or undersized hitch can cause damage to the RV frame. Jayco cannot be responsible for the tow vehicle suspension system. The final ball height after the tow vehicle/fifth wheel combination is completely hooked up is a factor that must be considered. To avoid overloading your trailer axles and minimize possible handling difficulties, your trailer should be level when hooked to your tow vehicle. Do not overload your tow vehicle.

Equipment that sometimes gives autos, trucks and sport utility vehicles a softer ride can accentuate swaying when pulling a RV; conversely, suspension that is too stiff will increase vibration, bounce and accelerate wear of your tow vehicle and RV combination.

**Jayco cannot be responsible for the suspension system of any tow vehicle. There are a variety of tow vehicle suspension systems available that will affect the ball height, stability and levelness of a hooked up RV.**

Make sure your dealer is aware of the tow vehicle you are using so a compatible hookup is achieved.

**Fifth wheel pin box**
The fifth wheel factory installed pin box is not interchangeable. Maintain the proper pin box weight on the hitch.

**Fifth wheel pin box height**
There is no recommended hitch height for fifth wheels; usually the fifth wheel pin box is adjustable for variance in trucks and truck suspension systems.

Adjust the hitch assembly so the tow vehicle and the fifth wheel are essentially level. A high hitch will transfer weight behind the axles and cause the vehicle to fishtail.

A low hitch will transfer additional weight to the hitch. Refer to the hitch manufacturer instructions to adjust the weight distributing hitch to the proper height.

## *Fifth Wheel Landing Gear*

The fifth wheel landing gear can be operated manually. The fifth wheel landing gear must be fully retracted before moving or towing the RV to prevent damage.

**⚠ WARNING**

**DO NOT USE THE FIFTH WHEEL LANDING GEAR TO SUPPORT THE TOW VEHICLE WEIGHT.** The fifth wheel landing gear is designed to bear the front loaded weight of the RV only.

## *Fifth Wheel Hitching Procedure*

Hooking up a fifth wheel will become easier with practice. The following procedure will help until you become more experienced.

1. Make sure the trailer wheels are blocked.
2. Make sure the hitch lever is in its open or “cocked” position unless it has been designed to open automatically. Adjust the fifth-wheel travel trailer pin to the proper height. Lower the tailgate, if applicable.
3. Back the truck so the hitch encircles the fifth-wheel travel trailer pin.
4. A gentle contact of the hitch saddle against the pin will cause the mechanism to close.
5. Secure the hitch lever as specified by the manufacturer.
6. Put the truck in drive (DO NOT press on the accelerator) and ‘bump’ the hitch to make sure it is locked.
7. Be sure to raise the fifth-wheel landing gear all the way up.

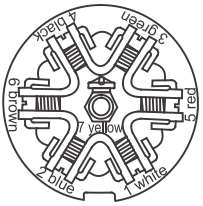
8. Attach the breakaway switch cable to the tow vehicle.
9. Plug the wire harness/connector plug from the tow vehicle to the fifth wheel.
10. Remove the wheel chocks from the trailer wheels.

## Wire Harness/Connector Plug

A 7-way wire harness/connector plug is wired into your trailer to connect electrical power from the tow vehicle for travel. This supplies power to the RV brakes, tail lights, clearance lights, turn signals, brake lights, etc. Wiring to operate your brakes must be the same size in both the tow vehicle and RV (the RV brake wiring is 12-gauge wire).

When attaching wires to your tow vehicle, carefully and tightly tape all the connections for moisture protection.

| | | |
|---|---|---|
| White | 1 | Ground |
| Blue | 2 | Brakes |
| Green | 3 | Running lights |
| Black | 4 | Auxiliary battery charge line |
| Red | 5 | Stop & left turn |
| Brown | 6 | Stop & right turn |
| Yellow | 7 | Back up |




**7-way trailer plug - Car end, rear view**

The connector plug may build up corrosion with extended use and should be cleaned periodically to insure good electrical contact. Make sure the connector plug is kept clean and protected from road elements as you travel.

## Weighing Your Tow Vehicle & RV

**⚠ WARNING**

The actual weight of the vehicle, all options, liquids, the hitch weight, and your personal cargo is important for you to know so you do not exceed the Gross Vehicle Weight Rating (GVWR) of the recreation vehicle. The volume of space available for storage may exceed the amount of available cargo capacity. Large storage compartments have been designed to accommodate normal camping items, which are bulky, but not necessarily heavy..

**⚠ WARNING**

DO NOT EXCEED YOUR GVWR! This means you should weigh your RV as loaded for your normal travel to determine the actual weight.

**⚠ WARNING**

If you exceed the GVWR, you MUST remove items from the RV, or drain liquids, then re-weigh the vehicle to ensure you have achieved a safe weight. Weight labels are posted inside your recreation vehicle so you can make a decision before you buy about how much cargo capacity is important for you personally.

There are two important factors when loading your RV, total weight and balance. It is imperative that you verify compliance within all applicable weight ratings. Overloading your RV will void the **Towable Limited Warranty** and the warranties of many component part manufacturers.

**Have your RV weighed periodically at a public scale to determine the proper load distribution.** Keep in mind that individual scales will operate differently.

The surroundings of the scale need to be adequate to accommodate weighing each side of your RV.

**To weigh your tow vehicle and RV**

**⚠ WARNING**

**Total weight of your tow vehicle and RV must not exceed the GCWR.** Do not assume that you can tow a RV that happens to be within the capacity of the tow vehicle hitch. By doing so, you may exceed the total GCWR of your tow vehicle and RV towing combination.

**⚠ WARNING**

It is important to redistribute the load to avoid component failure as well as to improve the handling characteristics of the vehicle.

Read through all the weighing instructions before you begin. If you have further questions, consult with your dealer or the scale operator. Your RV must be weighed fully loaded (that is with food, clothing, fuel, water, propane, supplies, etc).

1. Weigh the RV including the tongue weight, while detached from the tow vehicle. This actual overall weight must be less than or equal to the GVWR for safe operation. If the overall weight is greater than the GVWR, some contents must be removed until the actual overall weight is less than or equal to GVWR.
2. Hitch the RV to your tow vehicle. Weigh the RV and the tow vehicle to determine the GCW. Make sure that this rating is less than or equal to the GCWR as specified by the manufacturer of your tow vehicle. If this overall weight is greater than the GCWR, some contents must be removed to bring the combination into compliance with the listed ratings.

3. Weigh the RV while attached to but excluding the tow vehicle. This will result in the actual weight that is exerted on all of the RV tires. This weight may be subtracted from the overall RV GVWR to determine the actual “tongue” weight.
4. With the RV still attached to the tow vehicle, weigh each wheel position separately to ensure each tire is not overloaded.

**To determine the wheel position weight:**

5. Pull the RV onto the scale so only one tire is on the scale. Record the weight. Your RV must remain as level as possible on the scale (even though an axle or side is not physically on the scale). Obviously, to obtain the side-to-side weights, there must be enough space on either side of the scale to accommodate the RV being partially off the scale.
6. To calculate the opposite side of the RV wheel position weight, subtract the first side’s weight from the weight determined in step #3.

If there is a difference in the weights on one side of the vehicle as compared to weights on the other side, components (tires, wheels, brakes, springs, etc.) on the heavier side could be overloaded, even though the total axle load is within the GAWR.

It is important to redistribute the load to avoid component failure, improve the handling characteristics of the tow vehicle and not void the Towable Limited Warranty.

With these actual weights, it is now possible to compare them against the Trailer Weight Information label weight ratings to ensure you are below the posted minimum ratings.

## Towing

**⚠ WARNING**

Your RV braking system is rated for operation at GVWR **not** GCWR.

**⚠ WARNING**

Whenever possible, do not travel with waste in the holding tanks. Liquid or debris in the holding tank(s) may affect the towing characteristics and may result in property damage or personal injury.

**⚠ WARNING**

The propane cylinder(s) should be turned off when traveling. Most refrigerators will keep food cold or frozen for eight hours without running while you travel

You will find that your RV will travel safely and comfortably at most posted trailer highway speed limits. However, it will take longer than a passenger automobile to reach that speed. Keep this in mind when overtaking and passing another vehicle.

Allow more time to go around the vehicle you are passing.

You cannot cut back into the traffic lane as quickly due to the longer length of your tow vehicle/RV combination. Drive with caution to avoid situations that might require quick momentum changes.

Even though your RV is equipped with brakes designed for GVWR, we suggest practicing stopping away from traffic until you become accustomed to your RV's stopping distance. A good way to practice is at a large parking lot (where it is permissible). Easing to a stop and starting smoothly saves wear and tear on your tow vehicle/RV combination.

Be aware of road surface conditions. Slow down well in advance of dips and bumps to reduce the jolting to your tow vehicle/RV combination. Drive over them slowly and let the trailer tires pass over them before accelerating. Cross railroad tracks slowly (always release your brakes before crossing).

Adverse weather conditions and extremes in terrain may affect the performance and handling of your tow vehicle. Do not operate the tow vehicle cruise control on icy or extremely wet roads, winding roads, in heavy traffic or in any other traffic situation where a constant speed cannot be maintained.

When descending a long hill, drop down into a lower gear (or lower range if you have automatic transmission). Avoid conditions that require excessive and prolonged use of your brakes. Apply and release brakes at short intervals to give them a chance to cool. The tow vehicle transmission and engine will help in controlling downhill speed and can lengthen brake life. The distance required to stop the RV is greater than an automobile's. Use care when accelerating or decelerating on a slippery surface. Abrupt speed changes can cause skidding and loss of control.

Driving through water deep enough to wet the brakes may affect stopping distance or cause the vehicle to pull to one side. Check the RV's brake operation in a safe area to be sure they have not been affected. **Never operate any vehicle if a difference in braking efficiency is noticeable.**

**Vehicle Clearance**

Remember some bridges, older ones in particular, may not support the weight of your tow vehicle/RV combination. Know the weight and size of your towing combination and observe any posted weight and clearance limits. The added height of roof air conditioners, TV antennas or floodlights may cause clearance problems around some tunnels, canopies and hanging signs.

**Turning Corners**

When turning, the tires do not follow the path of your tow vehicle tires. The RV will make a tighter turn than the tow vehicle.

You must compensate for this action by carefully pulling the tow vehicle out into the intersection further than you would normally so that the RV clears the curb (or any parked vehicles along the curb).

When making a turn, check the road clearance and be aware of others. Have someone help guide you out of a difficult parking space or traffic pattern. Swerves and sharp turns, especially at high speeds, could result in loss of control of the RV.

**Backing up**

If your camping destination does not have pull through sites, pick a level site and back in carefully. We suggest you stop near the site, get out of the RV and observe the surrounding area. Check to ensure there are no obstacles in your path and that you have plenty of vehicle clearance. Check for low-hanging tree limbs, posts, large rocks or other obstacles.

Try to choose a site that is on the driver's side, so you can see what the rear of the RV is doing. With the site on the passenger side, you would be backing into the site on your blind side, which is more difficult.

When you determine the site conditions are satisfactory, maneuver the RV into position for backing up into the site space. Back the RV up slowly using your tow vehicle mirrors as a guide. Have another person outside the RV assist you until the RV is parked in the desired position.

**Parking**

After the RV is in the desired location, set the tow vehicle parking brake and place the transmission in park. Turn OFF the ignition switch. Go outside the RV and block all wheels securely with wheel chocks. The wheel chocks can be wood blocks or purchased items as long as they prevent the RV from rolling.

## Towing Behind Your RV

**⚠ WARNING**

If you do not have a **Jayco factory installed hitch receiver**, towing items behind your Jayco RV, or overloading the rear, will void the warranty and may result in: damage to the RV or add-on items, towing difficulties, property damage and/or personal injury.

**NOTE: IF YOU DO NOT HAVE A JAYCO FACTORY INSTALLED HITCH RECEIVER, DO NOT TOW ANYTHING BEHIND YOUR RV.** THE RV FRAME AND BUMPER ARE NOT DESIGNED FOR TOWING.

## RV Brake System

**⚠ WARNING**

Failure to maintain the brakes in proper working condition as specified in the operator's manual supplied by the axle OEM will cause property damage, personal injury and possibly death. Consult with your dealer for assistance.

The electric brakes are designed to work with the tow vehicle brakes. To maintain proper braking performance, both the RV and tow vehicle brakes must be used together. Separate use of the braking systems will cause accelerated wear and damage.

**When your RV is new, it is impossible to adjust the brake shoes precisely. It takes approximately 1,000 miles and/or 50 medium to heavy stops to "burnish" fit or "seat" the shoes to the brake drum. After the initial break-in period your brake shoes must be adjusted accurately for best performance and increased durability.**

Braking system components include:

- □ Tow vehicle battery
- □ Brake controller
- □ Wire harness/connector plug
- □ Trailer battery
- □ Breakaway switch

**Hydraulic brakes (if so equipped)**

Your camping trailer may be equipped with hydraulic surge brakes. These brakes operate automatically as the tow vehicle's brakes are applied. When the tow vehicle operator begins to decrease speed and apply the brakes, the weight of the moving trailer pushes forward and the coupler moved downward. This pressure moves the plunger, which in turn pushes

the piston and rubber cup inside the master cylinder. Brake fluid presses inside of the wheel cylinder and activates the brake shoes against the drum.

As designed, the weight of a trailer pushing forward will activate the surge brake system. When backing a trailer up hill, the trailer weight may activate the surge brake system, making it difficult to continue to reverse.

1. Prior to backing up a slope or through soft ground, pull the RV forward slightly to assure that the actuator socket is in the forward position.
2. Move the lever on the side of the actuator downward from the “towing position” along the curved slot in the actuator frame to the “backup position.” The slot has a notch at the bottom of its travel. Push the lever down to engage the locking notch.
3. The RV will now back up. This lever will slide into the correct position when pulling forward.

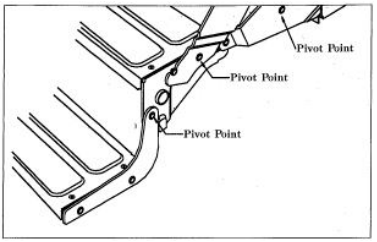
It is extremely important to keep the master cylinder full at all times. An empty cylinder invites moisture.

**Tow vehicle battery**
The tow vehicle battery is the primary source of power for your RV’s electric brake operation. To ensure available power when needed, keep your tow vehicle battery and charging system working properly.

**Brake controller (customer supplied)**
The brake controller should be installed in the tow vehicle to work in conjunction with the RV electric brakes. Consult with your dealer or the brake controller OEM to decide what is right for your towing combination.

## Entrance Door Step(s)

Make sure your entrance step is fully extended before exiting the vehicle, and retracted prior to towing.



RV Step

**Lubricating the step mechanism**
Carefully clean the area around the pivot points (the rivets involved in the motion of the mechanism). Lubricate these pivot points with an automotive grade, non-staining lubricant every 30 to 60 days.Wipe any excess lubricant off of the step and then clean the entire step after lubricating.

## Entrance Door

**⚠ CAUTION**

Make sure the entrance door is completely closed and locked when traveling. Locking the door helps prevent it from opening unintentionally.

The entrance door is located on the curbside of the RV. Always hold onto the entrance door when opening or closing it as damage caused because you failed to do so is not covered by the **Towable Limited Warranty.**

## Keys

Several keys are provided when you purchase your vehicle. Most keys have an individual key number stamped on the plate. Record these key numbers and keep the information in a safe place. You can order a key blank from your dealer to have duplicate keys made. If you lose the keys, contact your dealer or a locksmith for assistance. **Make sure the keys are not inside the vehicle before you close and lock the entrance door.**

**NOTE:** Locks on entrance and baggage doors need biannual lubrication using a light coat of silicone spray. Conditions such as rain, salt, dust and pollution may increase the maintenance needs.

## Keyless Entry (if so equipped)

If your RV is equipped with a keyless entry system, it is a battery operated system. Programming and changing batteries on the lock system are described in the following sections.

For detailed instructions, please refer to the manufacturer's operators manual included in your warranty packet.

**Battery powered keyless entry system:**

The battery powered entry system is a 4 button touch pad programmable deadbolt lock. The 4 buttons are labeled "1|2", "3|4", "5|6", "7|8". The button labeled "1|2" is the same button whether the number 1 or 2 is desired. Please note this handle uses touch technology. The buttons are activated by touch and do not require pressing the buttons. Touch the button and lift finger from button for proper code entry.

**Operation**

The entry system incorporates proximity sensing to determine when you want to activate the lock. To operate the lock you first must "wake up" the lock, by touching the "wake up area" to the right of the buttons. The buttons will illuminate once the Touch Pad is wakened. This indicates that the touch pad is ready for the code to be entered. (Refer to the diagram on next page)

**Preset Factory Code**

The entry system has a factory set code of 3,7,1,5 followed by the Enter button. The Enter button is the bottom button with the picture of the key. The Enter button is required to be touched after the code is entered. The factory code resets every time the batteries are removed for at least 10 seconds.

**Programming New Code**

To set a new code, wake up the lock by touching the "wake up area". Then touch and hold both the "3|4" button and the Enter Button for 2 seconds. The system will provide three short beeps, indicating it is ready to accept a new code. Enter the new 4 digit code followed by the Enter button. The system will provide four short beeps to indicate new code acceptance. This new code will now activate the lock.

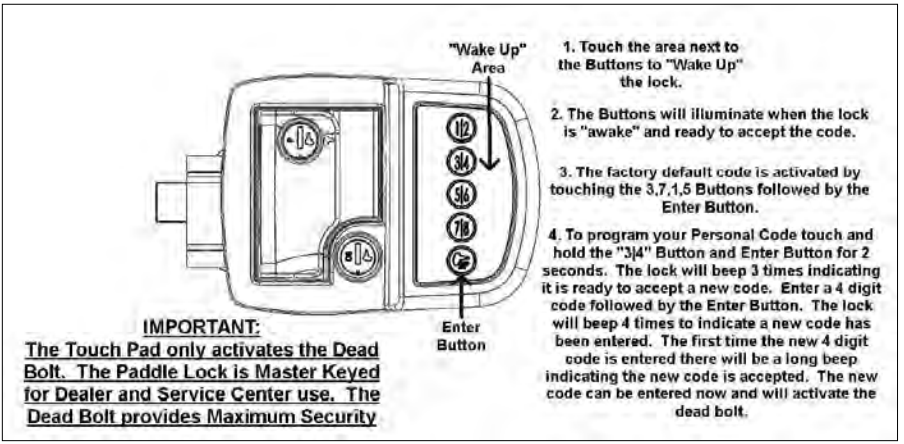
To reset the code, remove the batteries for at least 10 seconds. Re-install the batteries; and follow the steps to **Programming New Code.**

**Please Enter Personal Code to prevent inadvertent programming.**

**System Fault Logic:**

| **Action** | **Response** |
|---|---|
| Ready to Accept New Code | Three short beeps |
| New Code Entered | Four short beeps |
| Wrong Code Entered | One long beep |
| Dead Bolt Locks | Two short beeps |
| Dead Bolt Unlocks | Two short beeps |
| Dead Bolt fails to Lock | One long beep |
| Dead Bolt fails to Unlock | One long beep |
| Low Battery | One Long beep after the Lock/Unlock beeps |

The lock will cycle up to 10 more times once the low battery indication occurs. After this the final electric function in a low battery condition will be unlock and will not lock until the batteries have been replaced. Please note that if the deadbolt is in the locked position and the batteries die the deadbolt will remain locked. The key will always be able to activate the deadbolt lock.


"Wake Up" Area
1/2
3/4
5/6
7/8
Enter Button
IMPORTANT:
The Touch Pad only activates the Dead Bolt. The Paddle Lock is Master Keyed for Dealer and Service Center use. The Dead Bolt provides Maximum Security
1. Touch the area next to the Buttons to "Wake Up" the lock.
2. The Buttons will illuminate when the lock is "awake" and ready to accept the code.
3. The factory default code is activated by touching the 3,7,1,5 Buttons followed by the Enter Button.
4. To program your Personal Code touch and hold the "3|4" Button and Enter Button for 2 seconds. The lock will beep 3 times indicating it is ready to accept a new code. Enter a 4 digit code followed by the Enter Button. The lock will beep 4 times to indicate a new code has been entered. The first time the new 4 digit code is entered there will be a long beep indicating the new code is accepted. The new code can be entered now and will activate the dead bolt.

**Please enter your Personal Code to prevent inadvertent programming**

**General Maintenance and Operating Guidelines**

- □ Install fresh batteries as necessary. The lock is designed to function for months of normal usage with fresh, high quality AA batteries. Battery life is highly dependent upon battery quality, usage, and environment (temperature).
- □ Make sure there are no obstructions in the door frame to prevent Dead Bolt extension.
- □ Do not wash with power washer or high pressure cleaner. The lock is designed to resist water intrusion to protect its electrical components from normal water encounter such as rain.

The lock uses Touch Technology. The buttons are activated by **touching not pressing.**

- □ Remove batteries when storing or not using this lock for extended periods of time. **(Note:** the factory code will reset when the batteries are removed for longer than 10 seconds)

**Rain Sensing Technology:**
The lock system has Rain Sensing Technology to preserve battery life. Rain will wake up the touch pad and illuminate the buttons. After a few seconds of contact from rain (water) the lights turn off, but a code can be entered and the lock will function normally. The same effect occurs if the operator touches a button for a prolonged period of time. The buttons will illuminate, but then turn off. Again the lock will function normally.

**Additional Security Feature:**
The lock system recognizes the first 4 digits entered as the code. However if you feel someone is watching you enter the code you can continue to enter digits after the first 4 prior to touching the enter button. For example, if your code is 8,1,3,9 and you felt like you were being watched you would enter 8,1,3,9 then continue to touch additional digits before touching the enter button and the lock will still operate.

**Trouble shooting**
**After installation the touch pad does not work**

- □ Batteries are dead
- □ Batteries are not installed properly
- □ Plug not engaged properly
- □ Dead Bolt not engaging into Door Frame
- □ Obstruction in Door Frame
- □ Code not working
- □ Remove Batteries for 10 seconds then Program New Code
- □ Inside Paddle not Opening Latch
- □ Inside screws are not secured to the Housing.
- □ Buttons light but the Dead Bolt does not activate
- □ Replace the batteries

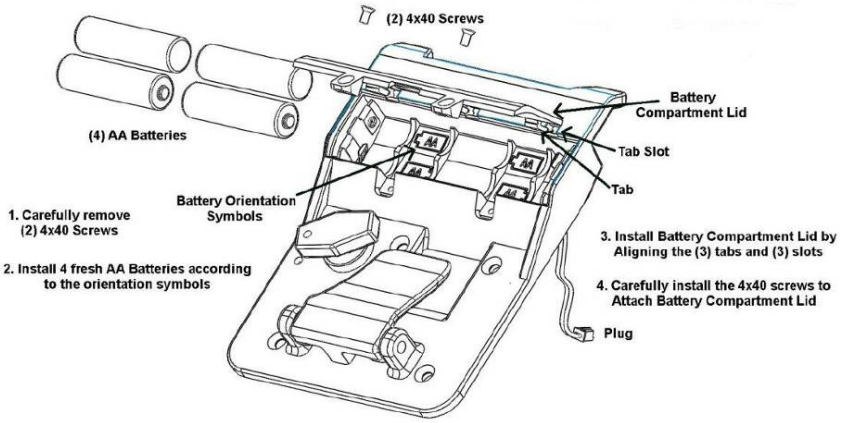
If the problem is not found on this list, please refer to the manufacturer's operators manual.

**Battery Installation:**
The entry system uses 4 AA batteries for operation. We do not recommend zinc carbon batteries for this application

Fresh batteries should be installed as necessary. Battery Life is highly dependent upon battery quality, usage, and environment (temperature). Remove batteries if the lock will not be used for extended periods of time.

The following steps are shown on the enclosed Battery Installation schematic.

1. Remove (2) 4x40 screws from Battery Compartment Lid. These screws are very small so please take care in removal and installation.
2. Install the AA batteries in accordance with the orientation symbols shown in the Battery Compartment. The batteries will fit tightly.
3. Install Battery Compartment Lid by aligning the (3) tabs on the lid with the (3) slots on the Inside Plate Assembly. These tabs act as a hinge for closing the Battery Compartment Lid.
4. Install the (2) 4x40 screws back to attach the Battery Compartment Lid to the Inside Plate Assembly.


(2) 4x40 Screws
Battery Compartment Lid
(4) AA Batteries
Tab Slot
Tab
Battery Orientation Symbols
1. Carefully remove (2) 4x40 Screws
3. Install Battery Compartment Lid by Aligning the (3) tabs and (3) slots
2. Install 4 fresh AA Batteries according to the orientation symbols
4. Carefully install the 4x40 screws to Attach Battery Compartment Lid
Plug

## Navigation System (If So Equipped)

Refer to the manufacturer's user guide for detailed operating instructions.

## Rear Backup Camera Prep

Your recreation vehicle has been pre-wired to allow installation of a (customer supplied & customer installed) rear backup camera. Wiring is in place to install the camera at the rear of the vehicle, and has been routed to the master bedroom to allow a hookup for the camera monitor.

## Campsite Hook-Up

- □ Refer to *Electrical System* section before connecting the shore line power cord (when using full hook-up) OR before starting the generator (if so equipped) or operating the vehicle on 12-volt power when dry camping.
- □ Refer to *Fuel & LP System section before using the LP system.* Open the LP gas tank valve (if so equipped) slowly. There may be air in the lines and five to thirty seconds of time is needed to bleed air before LP vapor fills the lines.
- □ Refer to *Plumbing Systems* section before connecting the fresh water supply or turning ON the water pump or water heater.
- □ When using full hook-up, connect the sewer hose to the campsite sewer hook-up.
- □ If applicable, start the refrigerator and the cooling or heating system.

**NOTE:** For extended dry camping, management of all your resources is essential. Check your battery levels and conserve battery power, use it sparingly.

## Leveling the RV

Now that you have parked your RV, you need to ensure it is level. Leveling is very important. A level RV is more comfortable for sleeping and walking.

The refrigerator is designed to operate when level for best performance due to the absorption system. The water drainage systems are designed with proper slope and must be level for proper operation. The appliances perform best when level.

## Auto Leveling System (If So Equipped):

Your RV may be equipped with a 6 point automatic leveling system. The use of the Electronic Automatic Leveling System to support the coach for any reason other than which it is intended is prohibited by Jayco and will violate terms of the limited warranty.

**⚠ WARNING**

**FAILURE TO ACT IN ACCORDANCE WITH THE FOLLOWING WARNINGS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH!**

- NEVER LIFT THE RECREACTION VEHICLE COMPLETELY OFF THE GROUND. LIFTING THE RV SO THE WHEELS ARE NOT TOUCHING THE GROUND WILL CREATE AN UNSTABLE AND UNSAFE CONDITION AND MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.
- THE LEVELING SYSTEM IS DESIGNED ONLY FOR LEVELING THE UNIT AND SHOULD NEVER BE USED TO PROVIDE SERVICE FOR ANY REASON UNDER THE RV SUCH AS CHANGING TIRES OR SERVICING THE SYSTEM. IT IS NOT RECOMMENDED THAT YOU CHANGE A TIRE YOURSELF.
- CLEAR ALL JACK LANDING LOCATIONS OF DEBRIS AND OBSTRUCTIONS. LOCATIONS SHOULD ALSO BE FREE OF DEPRESSIONS.
- WHEN PARKING THE COACH ON EXTREMELY SOFT SURFACES, UTILIZE THE LOAD DISTRIBUTION PADS UNDER EACH JACK.
- PEOPLE AND PETS SHOULD BE CLEAR OF THE COACH WHILE OPERATING THE LEVELING SYSTEM.
- KEEP HANDS AND OTHER BODY PARTS CLEAR OF FLUID LEAKS. OIL LEAKS MAY BE UNDER HIGH PRESSURE AND CAN CAUSE SERIOUS SKIN PENETRATING INJURIES.

The control unit is located in the forward basement compartment on the off door (road) side.

**Auto Leveling Control Panel**

**Prior to operation, make sure the following conditions are met:**

1. The trailer is parked on a reasonably level surface.
2. Front end of trailer needs to be supported. RV should be attached to a tow vehicle, or supported with jack stands before leveling.
3. Be sure all persons, pets, and property are clear of the trailer while the system is in operation.

**Leveling Features:**

- Automatic extension of jacks from full retract position (with automatic ground detection).
- Automatic leveling of the jacks.
- Manual leveling of the jacks.
- Automatic retraction of the jacks (with automatic full retract detection).
- Air bag suspension features (configurable on/off).
- Emergency retract/User alarm mode (jacks not retracted and park brake disengaged).
- Automatic jack error detection and error mode.
- Configuration mode for Air features.
- Configurations mode for Leveling Zero Point.
- Auto leveling cycle cannot be started until all jacks are fully retracted.
- System refuses any operation if a low voltage condition is detected.
- Automatic Safety Shutoff – if the control panel is left on and inactive for four minutes it will shut off.

Complete operating instructions are too detailed to explain in this manual, refer to the DVD disk in your warranty packet. This DVD includes an Operation Video and two owner's manuals (for 4 point & 6 point leveling systems).

**Familiarize yourself with the DVD and the manual pertaining to your specific leveling system and all safety warnings before attempting to operate the automatic self-leveling system.**

## *Emergency Stopping*

Always carry road flares or reflective warning signs to display if necessary. Pull off the roadway as far as possible for emergency stopping or tire changing. Turn ON your motor home hazard warning flashers. If traveling at night, use three red warning indicators such as flares, reflectors or lanterns as required by the Uniform Vehicle Code and Model Traffic Ordinance as follows:

1. Place the first warning indicator on the traffic side of the motor home, directed at the nearest approaching traffic.
2. Place the second warning indicator 100 feet behind the motor home in the center of the lane and toward approaching traffic.
3. Place the third warning indicator 100 feet in front of the motor home in the center of the lane and away from the traffic approaching from behind.

**NOTE:** Curves and/or hills may affect the safe placement of warning indicators.

**⚠ WARNING**

For personal safety, always stand off the road and out of the way of traffic.

## Emergency Towing

**⚠ WARNING**

Never allow anyone to go under the RV while it is being lifted and/or being towed.

If your RV needs to be towed, please contact an emergency road service provider or a qualified service facility for assistance.

## Wheel Lugs

After your first trip, check the wheel lug torque periodically for safety. Check the wheel lugs after winter storage, after a wheel removal, before starting a trip or following extensive braking. Use the correct star pattern sequence to attach the RV wheels (see **Wheel Lug Torque Chart.**)

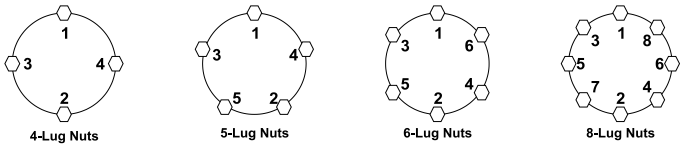
1. Start all nuts by hand to prevent cross threading.
2. Tighten the nuts in the sequence shown.
3. Tighten the lug nuts equally in stages as indicated for your trailer's wheels (see **Wheel Lug Torque Chart).**

**Check and re-torque after the first 10, 25 and 50 miles (16, 40 and 80 kilometers). Thereafter, check and maintain the torque according to the listed torque values (see Wheel Lug Torque Chart.)**

**NOTE:** The proper method of tightening wheel lug nuts is with a properly calibrated torque wrench and socket, not with an impact wrench or by hand. **Do not use a 4-way lug wrench or any other type of wrench that does not measure the actual pressure applied to the lug nut.**

Because of the importance of having proper torque on the wheel lug nuts, you should always have the wheels mounted and properly torqued by a qualified technician using the proper tools.

**WHEEL LUG NUT DIAGRAMS:**




**WHEEL TORQUE INSTRUCTIONS:**

1. Start lug nuts with fingers on studs to avoid cross threading.
2. Stage 1, Torque: Impact lug nuts in a star pattern* until snug to rim. *-- See Wheel Lug Nut Diagram*
3. Stage 2, Torque: Use calibrated torque wrench to torque each lug nut, in a star pattern, to the values indicated. Wheels must remain stationary during torquing process for control purposes. *--See Wheel Lug Nut Torque Chart* and *Wheel Lug Nut Diagram*
4. Stage 3, Torque: Use calibrated torque wrench to torque each lug nut, in a star pattern, to the values indicated. Wheels must remain stationary during torquing process for control purposes. *--See Wheel Lug Nut Torque Chart* and *Wheel Lug Nut Diagram*

**WHEEL LUG NUT TORQUE CHART:**

| Lug Nut | Stud Dia. | Rim | Type | Stage 1 Impact Gun | Stage 2 Clicker Setting (+/-3ft/lbs) | Stage 3 Clicker Setting (+/-3ft/lbs) | Acceptable Torque Range |
|---|---|---|---|---|---|---|---|
| 4-Lug Nuts | 1/2" | 12" | Steel | 40-50 ft/lbs | 60 ft/lbs | 70 ft/lbs | 50-75 ft/lbs |
| 5-Lug Nuts | 1/2" | 13" | Chrm/Steel | 40-50 ft/lbs | 60 ft/lbs | 70 ft/lbs | 50-75 ft/lbs |
| 5-Lug Nuts | 1/2" | 14" | Chrm/Steel/Alum | 40-50 ft/lbs | 95 ft/lbs | 115 ft/lbs | 90-120 ft/lbs |
| 5-Lug Nuts | 1/2" | 15" | Chrm/Steel/Alum | 40-50 ft/lbs | 95 ft/lbs | 115 ft/lbs | 90-120 ft/lbs |
| 6-Lug Nuts | 1/2" | 15" | Chrm/Steel/Alum | 40-50 ft/lbs | 95 ft/lbs | 115 ft/lbs | 90-120 ft/lbs |
| 6-Lug Nuts | 1/2" | 16" | Chrm/Steel | 40-50 ft/lbs | 95 ft/lbs | 115 ft/lbs | 90-120 ft/lbs |
| 8-Lug Nuts | 1/2" | 16" | Steel/Aluminum | 40-50 ft/lbs | 95 ft/lbs | 115 ft/lbs | 90-120 ft/lbs |

**TRANSPORTATION INSTRUCTIONS:**

1. Prior to travel and after excessive braking, all wheel lug nuts must be checked for torque.
   **This also applies to any service involving wheel or lug removal, during the life of the recreational vehicle.*
2. Torque readings must fall within the Acceptable Torque Range. *--See Wheel Lug Nut Torque Chart*
3. Torque specifications, must be checked by using a torque wrench.
   **Digital or Dial Torque Wrenches are recommended.*
4. If Torque falls below the Acceptable Torque Range, additional torque is required.
   – See *Wheel Torque Instructions* and *Wheel Lug Nut Diagram* for the correct pattern and recommended final torque value.
5. During travel, wheel lug nuts must be checked and re-torqued, as required, after the first, 10 miles, 25 miles, 50 miles, then periodically during travel (16 kilometers, 40 kilometers, 80 kilometers, then periodically during travel).
   – See *Wheel Torque Instructions* and *Wheel Lug Nut Diagram* for the correct pattern and recommended final torque value.
6. Failure to follow these instructions may result in wheel loss, an accident, or loss of control, resulting in death or serious injury.

## ⚠ WARNING

Check and tighten wheel lug nuts regularly to make sure they did not loosen during travel. Wheel lug nuts must be applied and maintained at the proper torque levels to prevent loose wheels, broken studs and possible separation of the wheel(s) from your trailer. The lug nuts on the wheels of your RV must be maintained according to listed torque values (see Wheel Lug Torque Chart.) Over-torqued and/or under-torqued wheels may result in component failure.

## ⚠ WARNING

Failure to maintain proper torque of the wheel lug nuts could lead to separation of the tire and wheel while driving, possibly resulting in property damage or personal injury.

## Tires

**Read and understand the following before taking your first trip in your RV!**

Proper care and maintenance of your tires is essential to ensure your safety, as well as the safety of others, as you travel.

Routine maintenance on your recreation vehicle is important, but it cannot be overstated just how critical proper tire maintenance is to the safety, operation and durability of your new vehicle.

You must follow the manufacturer's inflation guidelines for maximum load capacity; under-inflation is just as dangerous as over-inflation.

To insure your tires are operating safely, regular inspection of your tires and checking tire pressures is absolutely mandatory.

Examine your tires frequently for unusual wear. Alignment, balance and bearing wear will affect tire wear. Make sure to look for cracking, bulging, uneven tread wear, etc.

When you are using your vehicle, check inflation pressure weekly to insure maximum tire life and travel wear. Pressure should be checked when the tires are cold. During travel, tires heat up and pressure increases. **Do not bleed air from hot tires or your tires may then be under-inflated.**

**NOTE:** Cold tire inflation pressure is defined as a tire that has not been used for three or more hours, or has been driven less than one mile. Tire inflation pressure of a hot tire may show an increase of as much as 6 psi over a cold tire.

Tire pressure is the most important factor in the life and performance of your tires. Proper inflation should be monitored closely. Failure to do so could result in the overheating of a tire, which could result in a blowout. Inflation pressure should be as recommended by the tire manufacturer or as the federal label for the recreation vehicle indicates.

**⚠ WARNING**

It is recommended that the tire pressure be checked at the beginning of each trip to obtain the maximum life of the tire. Follow the instructions listed on the Federal Certification label, affixed to the roadside front corner of your trailer, to determine the correct tire pressure. Under-inflation may cause tire failures and swaying; this may result in loss of control, injury, death or property damage.

**⚠ DANGER**

Failure to follow proper inflation guidelines may result in tire failure, which, under certain circumstances can cause loss of vehicle control or accidents that may result in property damage, bodily injury and/or death.

**⚠ CAUTION**

Tire wear should be checked frequently. Once a wear pattern becomes firmly established in a tire it is difficult to stop, even if the underlying cause is corrected.

## Tire Wear Diagnostic Chart

| Wear Pattern | | Cause | Action |
|---|---|---|---|
| | **Center Wear** | Over Inflation | Adjust pressure to particular load per tire catalog. |
| | **Edge Wear** | Under Inflation | Adjust pressure to particular load per tire catalog. |
| | **Side Wear** | Loss of camber or overloading | Make sure load doesn't exceed axle rating. Align at alignment shop. |
| | **Toe Wear** | Incorrect toe-in | Align at alignment shop. |
| | **Cupping** | Out-of balance | Check bearing adjustment and balance tires. |
| | **Flat Spots** | Wheel lockup & tire skidding | Avoid sudden stops when possible and adjust brakes. |

## Changing A Tire

**⚠ WARNING**

Do not use the stabilizer jacks to support the RV while under the vehicle or changing tires. The stabilizer jacks are designed as a stabilizing system only. Do not use the stabilizer jacks as a jack or in conjunction with a jack. Attempts to change tires while supporting the RV with the stabilizer jacks could result in damage to the RV and risk causing serious injury or death.

**⚠ WARNING**

Never raise the RV by placing the jack under the axle, springs or any attachment parts. Failure to comply could result in property damage, personal injury or death.

1. Keep the RV attached to the tow vehicle. Block the tire on the opposite side of the RV from the tire you are changing.
2. Loosen the wheel lug on the tire you are changing before jacking up the RV. DO NOT remove the lug nuts; only loosen them for ease of removal when the tire is off the ground.
3. Locate the main frame rail of the trailer (it spans from front-to-back just inside the tires).
4. To raise the RV, place the jack (hydraulic or screw) under the main frame rail. It must be just ahead of the front tire or just behind the rear tire.

**⚠ WARNING**

Be sure to use only tires that are rated for RV use. The use of passenger tires should be avoided. The load rating/range embossed on the sidewall of passenger tires must be de-rated accordingly; they do not have the same load capability as tires that are specifically identified for RV use. Failure to use tires that are properly matched to your recreation vehicle could lead to premature tire wear or less than optimum trailer handling.

**Replacement**

If you experience a flat tire on your RV while driving, gradually decrease your vehicle speed (if possible). Hold the steering wheel firmly and move the RV to a safe place on the side of the road.

Any service or warranty coverage on tires is to be handled by the tire store representing the brand installed on your RV. They are not to be returned to your dealer or Jayco.

**⚠ WARNING**

When replacing a tire make sure to replace it with a tire of the same size and specifications (refer to the Federal Certification label.)

**If you have questions regarding your tires, contact the tire manufacturer or Jayco Customer Service.**

## Spare Tire Carrier (If So Equipped)

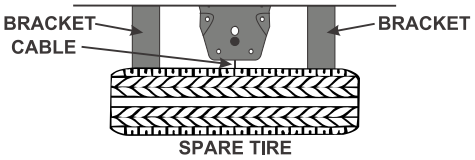
If your RV is equipped with a spare tire, it will either be mounted under the unit (hoist) or on the rear bumper.

**Under the unit (hoist) mounted**

**⚠ WARNING**

DO NOT exceed the maximum load capacities of 100 lbs. for the hoist. DO NOT use air driven guns or impact wrenches to lift the spare tire to the travel position.

The following diagram illustrates the travel position of the spare tire (the spare tire must contact the brackets as shown).




**Hoist mount spare tire position**

To secure the spare tire in the travel position:

Put the steel hoist lift support located on the end of the cable through the rim of the tire. The hoist lift support clips need to seat inside the center hole of the tire rim. The valve stem of the tire MUST be pointed in the up position or toward the bottom of the trailer.

1. Insert the crank handle into the hole located in the center of the rear “bumper.” Turn the crank handle to lift the tire to the travel position.
2. Two crisp breaks must be heard and felt to insure proper seating of the tire for travel.

Reverse this process to release the spare tire for usage.

**Bumper mounted**

The spare tire bracket can be released and extended down to access a storage compartment at the rear of the trailer without removing the tire.

**To extend the tire down**

1. Remove the cotter key from the pin holding the tire carrier in place.
2. Remove the pin and extend the tire carrier away from the trailer.
3. Always return the tire carrier to the upright position and lock it in place while traveling.

**To remove the tire from the tire carrier**

1. Remove the lug nuts holding the tire in place.
2. Remove the support bracket from the bottom lug.
3. Pull the tire from the tire carrier.

**Bumper mount**

**To install the tire on the tire carrier**

1. Place the tire on the carrier with the top lug bolt inserted into one of the holes in the tire rim and the bottom lug bolt in the center of the rim.
2. Install the top lug nut.
3. Place the support bracket over the bottom lug bolt across the center of the rim.
4. Install the bottom lug nut over the support bracket.
5. Make sure the lug nuts are tightened securely before returning to travel.

## *Fifth Wheel Set Up*

1. Pull into the site, and park the RV where you want it.
2. Block the wheels securely to prevent the RV from moving.
3. Drop the landing gear (important!) Refer to the operator's manual for proper operation.
4. Disconnect the wire harness/connector plug and breakaway switch lanyard.
5. Drop the truck tailgate (unless you have a tailgate specially designed to accommodate a fifth-wheel hitch).
6. Gently put your truck into reverse (don't give it any fuel/acceleration).

   This effectively moves the kingpin off the locking bar that will allow you to disengage it.
7. Step on brake and apply parking brake.
8. Disengage the locking bar and unhitch.
9. Drive away.
10. Adjust the fifth-wheel height for proper front to back leveling of the RV.

## Patio Awning

**⚠ WARNING**

Awnings must be closed (and locked if applicable) while the RV is in transit.

**⚠ WARNING**

If weather conditions are windy or stormy, close the awning(s) into the travel mode position.

Refer to the manufacturer's user guide included in your Warranty Packet for operating and safety information.

**Awning care**

It is a good idea to keep the awnings in the closed position if you will be away from the recreation vehicle for an extended period of time. Keep your awnings clean and in good condition to prevent costly repairs.

- □ Periodically check that the fasteners are tight. Tighten if necessary.
- □ Keep the awning fabric clean. For detailed cleaning information, refer to the manufacturer's owner information included in the Warranty Packet.

The 12-volt power awning (if so equipped) may need to be adjusted (retracted) to operate the entry door (some models).

## Electric Slide Room System (If So Equipped)

**⚠ WARNING**

Make sure the interior slideout room path and the slideout room itself is clear of people and objects before operating. Keep away from the slide rails and gear assembly when the room is in motion. They may pinch or catch on loose clothing causing personal injury. **Failure to follow these instructions could result in serious injury or death.**

**⚠ CAUTION**

Make sure the vehicle is level before operating the slideout room. Water leaks and other problems could result if the slideout is operated without leveling the vehicle.

**⚠ CAUTION**

Do not place excessive weight in the slideout room. It can cause the slideout room to malfunction and cause damage to the slideout.

**⚠ CAUTION**

Make sure the slideout is in the closed position prior to hooking the unit to the tow vehicle.

The slideout room system is designed for additional floor space and comfort. The mechanical components are gear driven. Electric powered slideout room systems have a manual override to allow you to extend or retract the slideout room(s) in case of a power loss. Make sure you have sufficient power available before operating your slideout system.

### Operating The Slideout

The Schwintek in-wall slideout system is designed to give you, the recreation vehicle enthusiast, a lifetime of trouble free serecreation vehicleice. It requires no maintenance it will never require any adjustments.

The Schwintek in-wall system has two vertical columns, a left hand and a right hand. Each of these columns has two serpentine gear racks that are attached to the slide room. Each side has a drive motor located at the top of the column. The right hand and left hand motors remain synchronized by the Dual Motor SynchronousVelocity Slide Controller (a circuit board typically located in the basement area of the recreation vehicle.

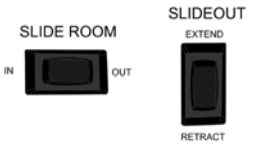
**⚠ CAUTION**

Additional support jacks are not needed under the slideout. Damage can occur to your slideout room from improper use of aftermarket support jacks.

1. The auxiliary battery (customer supplied) must be fully charged and connected. If possible, the recreation vehicle should be hooked up to 120-volt AC power so the converter operates.
2. The recreation vehicle must be level and the stabilizer jacks in the extended position.
3. Most slideout switches are located on the inside of the recreation vehicle, either in the command center panel or on the wall. To move the room out, press the OUT section of the switch and hold it until the motor stops (travel time is approx. 25 seconds). **Operating the switch after the room is fully extended will damage the switch and motor.** Some models may be equipped with a wireless remote control to operate the slideout. To operate the slideout using the remote, press the on/off button to power on the remote. Select the slideout you want to operate by pressing the corresponding button. Next, press and hold the (extend/retract) arrow button to move the room in or out. When you are finished moving the slideout,, press the on/off button once more to power off the remote. DO NOT try and time the end of the stroke by releasing the button early. ALWAYS allow the controller to stop both motors before releasing the switch button.

**NOTE:** Do not operate the switch after the room is fully extended as damage can occur to the motor and/or switch.

**Slideout remote control**




**Slide room switches on monitor panel**

**Slideout Wall Switch**

After the slideout is extended, verify that the corners of the black rubber seal are set up correctly. The corners of this seal are cut at a 45° angle. The top of the seal must overlap the side of the seal to avoid the possibility of water penetration.

**Exterior slideout room corner**

4. **Retracting slideout room**

   Press the IN section of the slideout control switch and hold it until the motor stops. Operating the switch after the room is fully retracted will damage the switch and motor.

**Maintenance**

**⚠ WARNING**

Do not work on your system unless the 12-volt DC (auxiliary battery, customer supplied) and 120-volt AC electrical systems (shore line power cord) have been disconnected.

Your slideout system has been designed to require very little maintenance. To ensure a long life of your slideout system, read, understand and follow these simple instructions. This system contains a pre-lubed bearing that is lubricated when the room is moved in and out. Do not spray oil or grease on the rails while the room is extended.

## *Troubleshooting The Slideout*

**If the slideout does not move when the slideout switch is depressed, follow these steps.**

- □ Check the auxiliary battery (customer supplied) for a full charge and good wire connections.
- □ Check the 12-volt fuse or circuit breaker.
- □ Check for loose connections at the slideout motor.

**If the slideout still will not operate, follow these steps.**

- □ If the slideout is extended, refer to the following section on overriding the specific slideout system installed on your RV.
- □ If the slideout is retracted, leave it in that position.
- □ Contact your dealer or customer service for repair assistance.

## *MANUAL OPERATION*

**Schwintek Inwall slideout system**

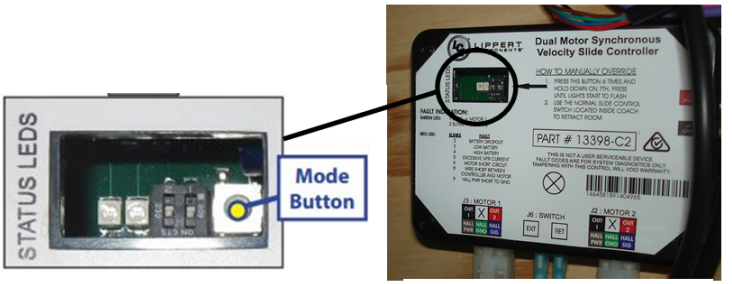
The Schwintek system comes with an “electronic” manual override. In event the slide out does not extend or retract follow these steps to override the system which should allow the slideout to be retracted.

**NOTE:** Fuses for the slideouts can be found in the load center and may be designated as auxiliary or slideout motor.

**Manual override**

1. Locate the slideout system controllers. There should be one for each slideout on the recreation vehicle. They are typically located in the basement compartment in the forward section of the recreation vehicle, either on the forward wall or on the ceiling. In some models they may be behind a cargo lined panel.

2. The controller that has malfunctioned should have a flashing red LED indicating a hall signal fault (will flash 8 or 9 times).
3. Press the “mode button” six times quickly, then press a seventh time and hold for approximately 5 seconds.
4. The red and green LED’s will begin to flash indicating you are in override mode. Release the mode button.
5. Use either a wall switch, or one of the slide room switches located on the command center panel (depending on the slideout). Press the switch toward the word IN or RETRACT (printed next to the switch) and hold it until the unit comes in completely.
6. This will allow you to get the recreation vehicle to a service center to have the slideout malfunction diagnosed.




**Slideout System Controller**

**⚠ CAUTION**

During this override procedure the motors are not synchronized. Visually watch the room, and if one side is moving significantly slower than the other (or not at all), immediately stop and call your dealer or Jayco Customer Service.

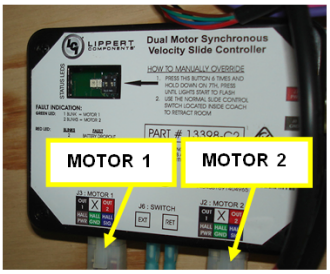
**⚠ CAUTION**

If the system stalls our before reaching end of stroke OR if the room does not close and seal tightly, call your dealer or Jayco Customer Service.

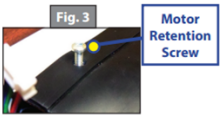
**Manually pushing in the slideout**

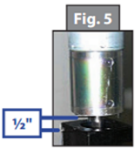
1. Locate the slideout system controller (refer to previous Step 1; locating the system controllers).
2. Unplug motor 1 and motor 2 connectors at the bottom of the slideout controller. This releases the motor brakes for each motor.
3. The slideout room can now be manually pushed in. Larger rooms may require several people to push or pull them.
4. Keep both sides of the slideout relatively even while pushing/pulling.

5. When the room is completely in, plug both motor connectors back into the control module. This will apply the motor brakes for road travel.




Slideout System Controller






**Disengage motors, manually retract the room and travel lock**

6. Locate and remove the motor retention screw which can be found near the top of each vertical column (Fig. 3).
7. Bend back the wipe seal and visually locate the motor (Fig. 4).
8. Pull the motor up until it disengages (about 1/2 inch).
9. Repeat this process for both sides of the slide room.
10. Physically push or pull the room back into the opening, keep both sides relatively even.
11. The room must be travel locked to keep the room in place for road travel.

**⚠ WARNING**

**DO NOT MOVE THE RV UNLESS THE MOTORS ARE PLUGGED IN TO THE CONTROLLER AND THERE IS BATTERY POWER TO THE RV. THIS SETS THE BRAKES ON THE SLIDEOUTS TO PREVENT THEM FROM MOVING DURING TRANSIT.**

**Error Codes**

When an error code occurs during operation, the board will use the LEDs lights to indicate where the problem is. For motor specific faults the green LED will blink (1) time for motor #1 and (2) times for motor #2. The red LED will blink from 2 to 9 times depending on the error code:

**Error codes are as follows:**

2 times **Battery drop out:** battery capacity low enough to drop below 6 volts while running.
3 times **Low battery**: voltage is below 8 volts at the start of a cycle.
4 times **High battery**: voltage is greater than 18 volts.
5 times **Excessive motor current**: high amperage, also indicated by (1) side of the slide continually stalling.
6 times **Motor short circuit**: motor or wiring to motor has shorted out.
8 times **Hall signal not present:** encoder is not providing a signal; usually a wiring problem.
9 times **Hall power short to ground**: power to encoder has been shorted to ground; usually a wiring problem.

When an error code is present, the board needs to be reset. Energizing the extend / retract switch will reset the board. Energize the extend / retract switch again to go back to normal operation.

**Troubleshooting information**

**Checking Fuses:** The Schwintek inwall slide requires a minimum 30 Amp fuse. Check the load center for blown fuses and replace any if necessary. If the fuse blows immediately upon replacement, there is a problem with the wiring to the inwall slide control box. A qualified service person should be called to check and repair.

**Obstructions:**

Check outside the recreation vehicle for possible obstructions such as a tree, post or car etc. Check inside the vehicle for any obstructions such as luggage, furniture or open cabinets etc. Also check for smaller objects that may be wedged under the floor or in the sides of the unit. Remove any obstructions before proceeding.

**Error Codes:**

Refer to error codes explained previously along with instructions on how to locate the inwall slide controller.

**Low Voltage:**

The Schwintek inwall slide controller is capable of operating the room with as little as 8 volts. But at these lower voltages the amperage requirement is greater. Check the voltage at the controller. If voltage is lower than 11 volts, it is recommended that the battery be placed on a charger until it is fully charged. It may be possible to "jump" the RV battery temporarily to extend or retract the room. Consult Customer Service before attempting to "jump" the auxiliary battery.

**Only 1 Side Moving:**

The Schwintek inwall room slide has a separate motor to operate each side of the room. Does only 1 side of the room move a short distance (2 to 4 inches) and stop? Will Non-moving side move with help? If only 1 side of the room is moving, then with another person's assistance press the switch to extend or retract the room while pushing the non-moving side in the appropriate direction. On larger rooms it may be necessary to have 2 or more people pushing the room.

**Non-moving side moved manually:**

Try to push the non-moving side in and out. If a motorshaft has broken then it will be possible to move that side of the room several inches by hand. Larger rooms may require several people to push.

**Debris in the rack:**

Check all 4 gear racks on the side of the room for debris.

**Do the status LEDs light?**

Locate the slide controller for the slideout in question. When the room slideout direction switch is actuated, do the status LEDs light up. Check this in both the extend and retract modes.

Refer to the Schwintek Slide Room Operation Guide included in your owner's packet for further information. Call Lippert at (866) 524 – 7821 or visit the Lippert website at www.lci1.com for additional troubleshooting information

## The Electrical System

The RV electrical system is comprised of two independent electrical systems. One operates off of 12-volt DC power and the other off of 120-volt 60hz AC power. All installations have been made in compliance with industry standards applicable on the date of manufacture. Because the electrical equipment and associated circuitry are engineered into a dedicated system specific to your RV, we recommend you do not make unauthorized changes or add fixed appliances to it. **Changes or additions made after delivery may result in a hazardous condition.**

Service and/or modification of the electrical system should only be performed by qualified electrical technicians using approved materials, components, and methods meeting current safety and code requirements. Please consult your dealer's service department for assistance.

To read more about the various components incorporated into the RV electrical system, please refer to the information contained in your Warranty Packet.

**Electrical System Maintenance**

Before working on the electrical system; always disconnect the shore power cord, turn off the Battery Disconnect switch (if so equipped) and turn off the 120V main circuit breaker (if so equipped). Then disconnect the negative 12VDC battery terminal from the battery. (Refer to the sections on **Battery Disconnect Switch & Load Center).**

**⚠ WARNING**

Use caution when using metal tools. If a tool contacts a battery terminal or metal connected to it, a short circuit could occur which could cause personal injury, explosion or fire.

## In Case Of An Electrical Fire

**⚠ WARNING**

Do not attempt to use water to put out an electrical fire. Water can spread some types of fire, and electrocution is possible with an electrical fire.

1. Have everyone evacuate the RV immediately.
2. Disconnect the power cord from the shore power receptacle.
3. Switch the 120-volt main circuit breaker (if so equipped) in the trailer to the "OFF" position.
4. Disconnect the negative battery cable(s) at the battery.
5. Always have faulty or damaged wiring and electrical components repaired immediately.

**NOTE:** It is important that everyone knows where to find the120-volt main circuit breaker (if so equipped) and how it operates. (Refer to **Load Center** section)

## GFCI Receptacle

Grounding is your personal protection from electrical shock. Each recreation vehicle has a ground fault current interrupter (GFCI) engineered into the electrical system. This device has been designed to reduce the possible injury caused by electric shock. The GFCI will not protect against short circuits or circuit overloads.

**Test all GFCI receptacles monthly**

Push in the GFCI "TEST" button. The GFCI "RESET" button should pop out indicating the GFCI receptacle has been "tripped" and interrupted 120-volt power.

Push in the GFCI "RESET" button to restore 120-volt power. Contact your t independent dealer for assistance if the GFCI "RESET" button does not restore 120-volt power and pops back out.

A "tripped" GFCI breaker indicates that abnormally high 120-volt current flow (a ground fault) was detected through the electrical system grounding circuit. A fault condition can be caused by faulty wire insulation, wet wiring inside an appliance, or faulty electrical equipment connected to the circuit, etc. All ground faults must be repaired before use of the motor home.

## 120-volt (50 AMP) AC System (If So Equipped)

The 50 amp 120-volt 60hz AC electrical system can be powered by an outside 120/240-volt 60hz utility service like those commonly found in campgrounds or by 120/240-volt 60hz generator power. The entire system is designed to operate on 2 legs of 120-volt power at a maximum current flow of 50 amperes per leg.

Exposure to voltages higher or lower than a nominal 120-volts, will damage or shorten the service life of the electrical system and appliances. The 50 amp 120-volt 60hz AC electrical system can be powered by an outside 120/240-volt 60hz utility service like those commonly found in campgrounds or by 120/240-volt 60hz generator power.

The following electrical components will only operate when connected to 120-volt power: air conditioner(s), refrigerator, microwave oven, television(s), home theater system(s), water heater, washer, dryer, fireplace, electric stove, and appliances plugged into convenience receptacles.

**⚠ WARNING**

Circuit breakers and fuses will not offer complete protection of the electrical system in the event of power surge or voltage spike.

## ⚠ WARNING

Make certain the external power source you connect the power cord to is a properly wired **50 amp NEMA 14-50** RV receptacle and not 240 volt AC.

### *Testing the Campsite Power Connection*

The campsite 120-volt power receptacle(s) should always be tested for proper functionality prior to plugging the recreation vehicle shore power cord into it. DO NOT plug the shore power cord into a campsite receptacle(s) that has reverse polarity, non-functioning ground circuits, or that shows outward signs of heat damage. Injury or damage resulting from connection to malfunctioning or improperly wired power sources is not covered by your recreation vehicle warranty.

Campsite 120-volt power receptacles can be tested using a digital multimeter or a dedicated circuit analyzer. Dedicated circuit analyzers plug directly into the campsite power receptacle and minimally test for open neutral, open ground, and correct polarity.

## ⚠ WARNING

- □ Do not hook up the power cord to any receptacle until you have verified proper polarity and grounding. Polarity indicators can be purchased in most electrical and hardware stores.
- □ Do not use any cheater plug, adapter or extension cord to reconfigure incoming AC power or break the continuity of the circuit connected to the grounding pin.
- □ Do not connect the power cord into an outlet that is not grounded, or adapt the power cord plug to connect it to a receptacle for which it is not designed.
- □ Do not remove the grounding pin to connect to a non-grounded receptacle. Removal of the ground pin disables an important safety feature designed to prevent shock and electrocution hazards.
- □ Do not connect the power cord to an extension cord. Use of an improper extension cord will cause overheating of the cord as well as potentially causing premature failure of the AC equipment.

It is the responsibility of the owner of the electrical receptacle to ensure that the receptacle is properly wired and grounded. Reverse polarity and/or improper grounding of your RV can cause personal injury or death.

## 50-amp Power Cord (If So Equipped)

**⚠ WARNING**

**PLUG INTO 50-AMP SERVICE ONLY.**

The 50 amp external utility power cord is commonly referred to as the “shore” power cord. It is designed to mate and properly function with 50 amp “shore” power receptacles available at most campgrounds.

The shore power cord is designed to continuously carry the 50 amp current flow required to power each leg of the electrical system. It also creates a critical ground connection between the vehicle electrical system and the campground shore power receptacle.

## Connecting The Power Cord

**⚠ WARNING**

Plugging the shoreline power cord into an incorrectly wired power source could damage the recreation vehicle electrical system and result in severe or fatal injury.

Always test the external power source (i.e., the campsite power receptacle or electrical box) with a ground monitor before connecting your power cord to it. If the ground monitor indicates ‘reverse polarity’ or an ‘open ground’ **DO NOT** connect the power cord.

1. Turn “off” the load center main 120-volt circuit breaker.
2. Carefully extend the entire length of the power cord (approximately 25’-35’) from the electric cable hatch to the external power source.
3. Plug the power cord into the receptacle. Be sure all the power cord prongs are properly plugged into the receptacle.
4. Return to your recreation vehicle and turn “on” the load center main circuit breaker.
5. To help prevent power surges from damaging the connected loads, please follow these instructions when hooking up to the external power source:

**The shore line power cord should be unplugged when the recreation vehicle is left unattended. If something would happen to the electrical system, this may help limit potential damage.**

When you are ready to leave, reverse the power cord connection process. Use care to prevent damaging the power cord electrical connection pins when connecting or disconnecting the shore line power cord. Grasp the plug to remove the power cord from the outlet; do not unplug it by pulling on the cord.

**Maintenance**

Inspect the power cord for cuts, cracks and worn insulation. Have the power cord replaced immediately if these symptoms are noticed.

## ⚠ WARNING

The power cord must be fully extended when in use and not left coiled in the electrical compartment or on the ground. If the power cord is left coiled, it may potentially create enough heat to melt its protective casing..

### *Calculating 50 AMP Electrical Load (If So Equipped)*

When connecting appliances to the electrical system, remember that 120-volt power usage is limited to 50 amps per electrical system leg for a total of 100 amps. Be mindful of the fact that each operating appliance collectively places an added load on your 120-volt electrical system.

An unintentional “trip” of a circuit breaker may occur if you overload the motor home’s and/or campground’s electrical system. The amperage rating of individual appliances can be calculated by dividing appliance wattage consumed (normally listed on the appliance) by nominal design voltage (120 for a 120-volt appliance). For example: 1200 watts divided by 120-volts equals 10 amps.

**Only connect the shore power cord to RV 50 amp 120/240 volt electrical power receptacles.**

## ⚠ WARNING

- □ Do not hook up the power cord to any receptacle until you have verified proper polarity and grounding. Polarity indicators can be purchased in most electrical and hardware stores.
- □ Do not use any cheater plug, adapter or extension cord to reconfigure incoming AC power or break the continuity of the circuit connected to the grounding pin.
- □ Do not connect the power cord into an outlet that is not grounded, or adapt the power cord plug to connect it to a receptacle for which it is not designed.
- □ Do not remove the grounding pin to connect to a non-grounded receptacle. Removal of the ground pin disables an important safety feature designed to prevent shock and electrocution hazards.
- □ Do not connect the power cord to an extension cord. Use of an improper extension cord will cause overheating of the cord as well as potentially causing premature failure of the AC equipment.

It is the responsibility of the owner of the electrical receptacle to ensure that the receptacle is properly wired and grounded. Reverse polarity and/or improper grounding of your RV can cause personal injury or death.

## Inverter (If so Equpped)

Your RV may be equipped with a factory-installed inverter that converts 12-volt DC current to 120-volt AC current. It is important that you familiarize yourself with the inverter function and operation. The inverter should be "off" when not in use.

**The factory-installed inverter is not intended for use with medical device(s).**

## Converter

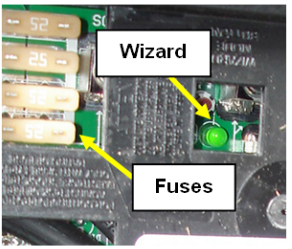
The power converter converts 120-volt AC power to useable 12-volt DC power when the shore power cord is connected to an external power source.

The converter has a built-in protective thermal breaker that will shut it down should overheating occur. Overheating can be caused by operating the converter above its maximum power output for an extended period of time, or by an obstruction to its ventilation air flow. To reduce converter heat build, keep unnecessary 12-volt lights and motors turned "off". Keep the converter cooling fins and fan clear of obstructions.

**Charge Wizard Operation**

The built in Charge Wizard will automatically determine the best mode to charge your battery. It will select between 3 possible modes of battery charging; **NORMAL, BOOST or STORAGE**.

A Green LED (next to the Wizard Mode Button) will indicate by flashes, which mode the Charge Wizard is currently using.




**Wizard Button & Reverse Protection Fuses**

**NORMAL MODE**: Green LED flashes once per second. Battery is between 50% and 90% charged. When battery reaches 90% charge, the green LED will flash 2-3 times per second. Output voltage in this mode is 13.6VDC and converter is safely completing the charge of the battery.

**BOOST MODE:** Green LED on solid. Output voltage is 14.4VDC to rapidly charge the battery up to 90% of full charge.

**STORAGE MODE**: Green LED flashes every 6-8 seconds. Output voltage has been reduced to 13.2VDC, the RV battery is fully charged and converter is maintaining the charge.

Also included is a Wizard Mode Button used to override the Charge Wizard (See **MANUAL MODE**

**MANUAL MODE: (Not recommended)** Operated with the Wizard Mode Button. Refer to the Power Control Center owner's manual for further information regarding this mode.

**REVERSE BATTERY PROTECTION:** If a battery is accidentally hooked up backwards, the converter will be protected. Easily accessible ATC type fuses will blow when a battery is connected in reverse. Replace with fuses of the same type and rating. Four reverse protection fuses (tan in color) are located next to the Wizard Button.

**Inspection and maintenance**
If the 12-volt power converter is not working (auxiliary battery not being charged) check the reverse polarity fuse(s) in the Load Center. There are no customer serviceable parts inside the converter case and the manufacturer's warranty will be void if the case has been removed. If you have further concerns contact your dealer.

## 12-volt DC System

The majority of your recreation vehicle lighting is powered by 12-volt electricity. The 12-volt DC system is composed of components that will operate when the following conditions are met:

- □ Power is supplied by the tow vehicle alternator when the engine is running and the 7-way trailer plug is connected. This powers the RV's running lights, brake lights, turn signals and brakes. In addition, the 7-way trailer plug provides a common ground and a 12-volt charge line to charge the auxiliary battery.
- □ The converter will supply interior 12-volt DC power when the power cord is plugged into campground power. The converter will also charge the RV battery in most situations. (Refer also to the Battery Disconnect section)
- □ The auxiliary battery powers many interior 12-volt components including the lighting fixtures, water pump, 12-volt motors, 12-volt appliances, etc. It also powers the breakaway switch.

## 12-volt Fuse Panel

The 12-volt fuses are located in the Load Center. They are labeled to indicate fuse sizes, positions and the components powered. At the beginning of camping season, inspect all the 12-volt fuses in the Load Center and replace as needed.

**Replacing a fuse**
Before replacing a fuse, always turn off electrical component(s) protected by it.

1. Disconnect the shore power cord.
2. Disconnect the recreation vehicle auxiliary battery main negative battery cable.
3. Remove the fuse panel cover to check fuses.
4. Pull the fuse straight out of the fuse block. If the fuse is not blown, something else must be causing the problem. Please contact your dealer for further assistance.
5. Insert a new fuse of the same specified voltage, amperage rating and type in the original location. **Never use a higher rated replacement fuse.**

The fuse panel label should be kept permanently affixed to your recreation vehicle. The fuses will not offer complete protection of the recreation vehicle electrical system in the event of a power surge or spike.

**⚠ WARNING**

Replacement fuses must be of the same voltage, amperage rating and type. Never use a higher rated replacement fuse; doing so may cause a fire by overheating the RV wiring.

Below is a typical wiring layout. Your individual recreation vehicle may be different. Refer to the diagram inside the Load Center for specific fuse assignments.

| # | Size | Function |
|---|---|---|
| 1 | — | Open |
| 2 | 15 amp fuse | Bathroom Lights & Vent |
| 3 | 15 amp fuse | Pump/Monitor Panel/Range Hood/Sink Lights |
| 4 | 15 amp fuse | Refrigerator/Furnace |
| 5 | 15 amp fuse | Bedroom |
| 6 | 15 amp fuse | TV/Radio/Propane Detector |
| 7 | 15 amp fuse | Ceiling Lights |
| 8 | 15 amp fuse | Bunk Lights |
| 9 | 15 amp fuse | Slideout Lights |
| 10 | 15 amp fuse | Option |
| 11 | 15 amp fuse | Option |
| 12 | 20 amp auto | Slideout Motor |

## 12-volt DC Outlet (If So Equipped)

There may be a 12-volt DC outlet (not applicable on all models) in your recreation vehicle. When the 12-volt DC outlet is used as a power source for an electric appliance, make sure the appliance operates on 12-volt DC power and that it consumes less than 60 watts (5 amps) of power.

**⚠ WARNING**

Keep the protective dust cap on the 12-volt DC outlet when not in use to prevent ingestion of foreign material and potential short circuit conditions.

## Auxiliary Battery (Customer Supplied)

Your recreation vehicle has many 12-volt DC loads. When combined, their total is more than the converter can produce. High demands for 12-volt power can be met by an auxiliary battery for limited periods of time. The 12-volt DC electrical system is designed for usage with a Group 27, deep cycle battery.

**Dry camping**

Consider the charge condition of the auxiliary battery when dry camping. If the auxiliary battery is not being recharged and power is being drawn from it, it will eventually discharge. A battery will discharge at a faster rate as its energy level becomes depleted. It is recommended you plan your electrical usage accordingly. For accuracy, test the auxiliary battery voltage using a volt-ohm meter (customer supplied).

A fully charged auxiliary battery will read 12.7 volts DC and 1.265 specific gravity at 80°F (32°C). The auxiliary battery is considered discharged at 11.8 volts, and dead at 11.65 volts.

When voltage drops below those levels, permanent damage may occur. Typically, a deep cycle battery has an amp-hour rating of 75-100 amps.

If you run the furnace and refrigerator simultaneously, you will be using approximately (12.0 + 3.0) 15.0 amps per hour. This does not include any 12-volt lights, water pump or any other 12-volt component.

If the furnace and refrigerator in the above example operated constantly, a 75 amp-hour battery would become fully discharged in 5 hours (75ah / 15a = 5h).

The auxiliary battery should be installed in parallel with the battery in your tow vehicle. When the 7-way trailer plug is connected, both batteries power the RV so it is important not to discharge your tow vehicle battery below the level required to start the engine. To prevent this from occurring, disconnect the 7-way trailer plug or install a battery isolator. When the tow vehicle engine is operating with the RV connected, the tow vehicle charging system will charge both batteries.

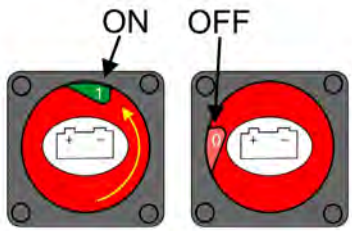
**Replacement and maintenance**

Some equipment in your RV will draw small amounts of current even when turned OFF. To prevent the auxiliary battery from being discharged when your RV is not connected to shore line power, disconnect the auxiliary battery negative cable at the battery. During storage, it is important to check the voltage monthly and recharge the auxiliary battery as needed. If you remove the auxiliary battery from your RV, store it in a dry, cool area per the manufacturer's instructions.

When it is time to replace the auxiliary battery, replace it with a Group 27 deep cycle battery only. Contact the battery manufacturer for further information. Do not reverse the positive and negative battery cables (doing so will blow the reverse polarity fuse(s) that protect the converter).

## Battery Disconnect Switch (If So Equipped)

The Battery Disconnect switch is located in an enclosed exterior compartment typically at the front of the recreation vehicle. This switch shuts off all 12VDC power to the main 12V fuse panel, and the interior of the vehicle. When the switch is ON, there will be green area visible along with a "1"(one) at the top of the switch. To turn the switch OFF, turn it counter-clockwise until you see red area along with a "0" (zero).




**Battery Disconnect Switch**

## Battery Isolator For Your Tow Vehicle (Customer Supplied)

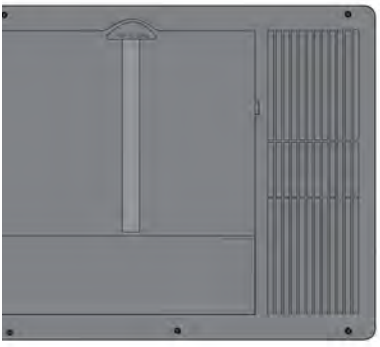
You may want to consider the installation of a battery isolator on your tow vehicle as a convenience feature:

- It receives current from the tow vehicle alternator and controls distribution of energy to both the RV auxiliary battery and the tow vehicle battery.
- It serves as a check valve to prevent energy from being drawn from your tow vehicle chassis battery (so you can start your tow vehicle engine).

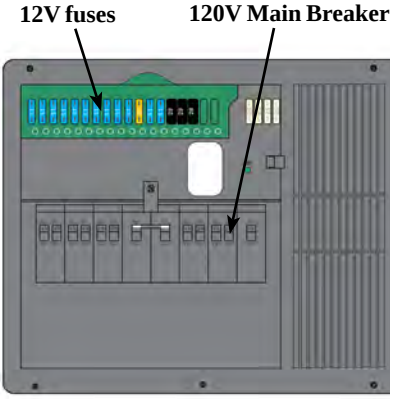
Your dealer can assist you with the selection, purchase and installation of this aftermarket part. than 60 watts (5 amps) of 12-volt power. To prevent short circuits do not allow metallic foreign matter to get into the 12-volt DC outlet.

## Load Center

The Load Center contains 12VDC fuses and 120VAC circuit breakers for almost all of the electrical appliances and circuits in the RV. The 120V Main Breaker (if so equipped) is located in this panel and will turn off all 120-volt power to the recreation vehicle. The Load Center is a hinged plastic panel typically attached to a cabinet face in the main living area. Locations will vary by model. Refer to the diagram inside the Load Center for specific fuse assignments. Most load centers contain the same components, but they may be positioned differently. Not all load centers will include a main breaker.



Typical Load Center Exterior Panel




50A Load Center Panel w/120 volt Main breaker

## Approximate Electrical Load Ratings

| 12 Volt System | |
|---|---|
| Aisle Lights | 1.0 AMP |
| Baggage Compartment Lights | 1.4 AMPS |
| Decorative Wall Lights | 1.5 AMPS |
| Dinette Light | 4.5 AMPS |
| Exterior Entertainment Center | 5-7 AMPS |
| Fantastic Fan | 1.5 AMPS |
| Fluorescent Double Lights -12” | 2.0 AMPS |
| Fluorescent Double Lights -18” | 2.5 AMPS |
| Furnace | 12.0 AMPS |
| Generator Start | 95.0 AMPS* |
| Halogen Light | 1.7 AMPS |
| Illuminated Switch | .125 AMP |
| Inverter | variable |
| Leveling System | 95.0 AMPS* |
| LP Detector | .125 AMP |
| Map Light | 1.5 AMPS |
| Porch Light | 1.5 AMPS |
| Power Awning | 10.0 AMPS |
| Power Vent | 5.0 AMPS |

| | |
|---|---|
| Refrigerator | 3.0 AMPS |
| Shower Light | 1.4 AMPS |
| Step Cover | 10.0 AMPS |
| TV Plate/Antenna Booster | 1.0 AMP |
| Vanity Light | 4.2 AMPS |
| Water Heater | 6.0 AMPS |
| Water Pump | 7.0 AMPS |

*Momentary Load

12 Volts: Labeled watts divided by 12 = Power consumed in AMPS

| 120 Volt System | |
|---|---|
| Air Conditioner | 18 AMPS |
| Coffee Maker | 6-12 AMPS |
| Converter (each) | 8 AMPS |
| DVD System | 3 AMPS |
| Fireplace | 12 AMPS |
| Hair Dryer or Curling Iron | 10-14 AMPS |
| Microwave | 12 AMPS |
| Refrigerator | 6 AMPS |
| Satellite Receiver | 2 AMPS |
| TV | 2-4 AMPS |
| Vacuum Cleaner | 8 AMPS |
| Washer/Dryer | 12 AMPS |
| Water Heater | 12 AMPS |

120 Volts: Labeled watts divided by 120 = Power consumed in AMPS

## Generator

The factory-installed generator will produce 120-volt AC power for use when camping in areas where shore power is unavailable. 120-volt power from the generator is output to the AC distribution center by way of a factory-installed automatic transfer switch. In the default mode, the automatic transfer switch connects the generator to the AC distribution center when the generator is operating and shore power is disconnected.

When the generator is operating it will power the converter, which in turn will charge the house and chassis batteries. The generator requires 12-volt power from the house batteries to start and draws fuel from the chassis fuel tank. If the fuel tank drops to or below 1/4 full, the generator will automatically shut off to keep the motor home from being stranded. Be aware

**NOTE:** Be sure to follow the break in procedure outlined in the manufacturers owner's manual.

the generator, when operating, gives off carbon monoxide.

**Before starting the generator**

1. Make sure the carbon monoxide detector is working.
2. Turn "off" air conditioners and all other appliances.
3. Check for fuel, exhaust and coolant leaks.

**STOP the generator immediately if there is a fuel, exhaust or coolant leak and have it repaired!**

**⚠ WARNING**

**CARBON MONOXIDE IS DEADLY!** Do not run the generator when your motor home is indoors or in a confined space. Asphyxiation or carbon monoxide poisoning hazards exist whenever generator exhaust gasses can accumulate.

**⚠ CAUTION**

Excessive cranking can overheat and damage the generator starter motor. Do not crank for more than 20 seconds at a time. Wait at least two minutes before trying again. If the generator does not start after the third try, refer to the generator manufacturer's user manual for more information.

**NOTE:** Refer to the Fuel System section of this manual for detailed information on fuel gauge operation.

**To start the generator manually**

1. A remote start/stop switch is located inside the recreation vehicle. The switch will be located with an hour meter either on a separate panel, or on the main monitor panel (location will vary by model). A second start/stop switch is located on the generator.
2. Press the operation control switch to start the generator. (Depending on how cold it is, preheat can take up to 15 seconds).
3. The hour meter will monitor minutes of usage when the generator is running.
4. Before stopping the generator, turn off air conditioners and large electrical loads and allow the generator to run 3 to 5 minutes to cool down. Flip the red start/stop switch to stop.

For top performance and engine life, especially in colder weather, let the generator engine warm up for two minutes before connecting (turning "on") appliances.

## ⚠ WARNING

**CARBON MONOXIDE IS DEADLY! MOVING PARTS AND ELECTRICITY** can cause severe personal injury or death. To reduce exposure to these hazards, **always disable AGS (if so equipped) before:**

- □ Sleeping in vehicle, unless vehicle has a working CARBON MONOXIDE detector.
- □ Parking vehicle in garage or confined space.
- □ Parking vehicle for storage.
- □ Servicing vehicle for storage.
- □ Servicing generator.
- □ Servicing batteries.
- □ Servicing appliances or electrical systems.
- □ Fueling the vehicle.

**DO NOT run the generator or use the AGS AUTO ON or QUIET ON modes (if so equipped) when your RV is indoors or in a confined space**. Asphyxiation or carbon monoxide poisoning hazards exist whenever generator exhaust gasses can accumulate.

**Automatic Generator Start (AGS) system (If So Equipped)**

When enabled, the AGS system will automatically start and stop the generator according to operator or factory selected parameters. It can also be used as a manual generator start/stop switch. AGS is typically used on motorhomes.

1. The AGS system has been set up and tested using default values for the factory-installed generator. Consult the manufacturer's manual for operator programming information.
2. The AGS system is enabled by pressing the AUTO GEN key followed by pressing the ENTER key on the face of the Energy Command control panel.
3. The AGS system will not operate unless the battery disconnect switch is "on".
4. The factory-installed AGS system will not start the generator when shore power is connected to the motor home. If shore power is connected to the motor home when the AGS has started the generator, the generator will stop.
5. The AGS system as installed will be disabled anytime the chassis ignition key is cycled to either the "on" or "off" position. The AGS may be manually re-enabled after an ignition key cycle.
6. The AGS system, when enabled, and with the above conditions met, can start and stop the generator according to:
   - □ front air conditioner call to run
   - □ rear air conditioner call to run
   - □ coach battery low charge level
   - □ coach battery charge level prior to camp ground quiet time (when AGS is set to quiet time "on" mode).

**Maintenance**

With the exception of simple items such as normal maintenance (i.e., oil changes, etc.), all service work should be done by a repair facility authorized by the generator OEM. Improper adjustments can damage the generator and electrical appliances, and can result in a safety hazard. If any discrepancy or problem is noted, contact your dealer for assistance.

## Solar Prep

Your recreation vehicle has been wired with a (exterior) plug in that will allow the batteries to be trickle charged using a free standing solar panel. The solar panel kit is a customer purchased and installed option and is not supplied by Jayco.

**Solar Plug**

## LED Decorative Light Strips (If So Equipped)

Some models may include decorative LED light strips which may be installed on the awning or on the front cap. When the awning light switch is turned on, these LED light strips illuminate.

## Replacing Light Bulbs

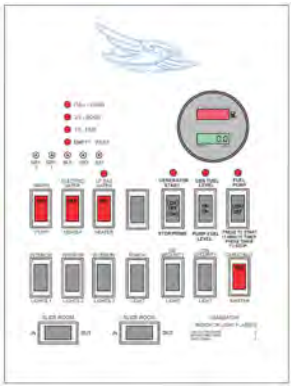
Before replacing a bulb, be sure the light is off. Do not touch the glass part of the new bulb with your bare fingers. The skin oil left on the glass will evaporate when the bulb gets hot, the vapor will condense on the reflector and it will dim the surface.

Replacement light bulbs must be of the type, voltage and wattage listed on the lamp fixture. Use of incorrectly sized bulbs can overload lam circuits and may create a fire hazard by overheating the fixture.

| | | |
|---|---|---|
| Interior | Ceiling, Bunk Lights | #921 |
| Exterior | Porch Light | #922 |
| Exterior | Tail Light / Signal | #3157 |
| Exterior | Clearance | #194 |

## Command Center

The command center is typically a panel located just inside the entrance door or in the living area of the recreation vehicle, and contains switches and controls for electrical functions for the RV. Depending on your model, the command center may be a panel complete with switches, or it can be a group of switch pods mounted to a recessed panel inside a cabinet. The systems monitor (which indicates tank levels and battery charge) may be included on this panel (Refer to the Monitor Panel section). Some models may have the switches/ controls mounted directly to the wall in the living area or vicinity of the entrance door.



Command Center Panel

Command Center Panel W/Switch Modules

Mounted to wall

**Command Center Panel:**
Typical items found on this panel include (may vary depending on model):

- □ Fuel gauge and hour meter with switches for fuel pump and fuel levels
- □ Lighted red pump switch, lighted red water heater switches (electric & LP gas)
- □ Generator start / stop switch
- □ Tank heater switches
- □ Light switches for porch lights, exterior security lights, interior lights, awning LED lights, front cap LED accent lights
- □ Cargo bed red lighted master control switch
- □ Slideout control switches (press and hold to extend / retract)
- □ Awning control switches (press and hold to extend / retract)

**Command Center Panel with Switch Modules:**
Items may include separate switch modules and controls that are mounted to a recessed plastic panel.

Typical items found on this panel include (may vary depending on model):

- □ Systems monitor with LED indicators for tank levels and battery charge status
- □ Systems monitor includes lighted red switches for pump and water heater
- □ Slideout switches (press and hold to retract / extend slideouts)
- □ Light switches for porch lights, exterior security lights, interior lights, awning LED lights, power entry step
- □ Awning switches (press and hold to retract / extend awning)
- □ Auto leveling control panel (for leveling the recreation vehicle)
- □ Inverter panel (power switch with display)

- □ Generator start / stop control with hour meter
- □ Cargo bed red lighted master control switch
- □ Power bunk bed lift control switch

## Propane Gas System

Propane or LP (liquefied petroleum) gas is a clean and efficient form of energy when proper handling and safety precautions are observed. The propane system in your recreation vehicle furnishes the fuel for cooking, heating and hot water. Propane can also be used as an alternative energy source for refrigeration

**The propane fuel system is comprised of numerous components such as the propane container, hoses, the propane gas regulator, piping and copper tubing lines to each appliance.**

Propane is heavier than air; the gas tends to flow to lower areas and will sometimes pocket in these low areas, such as the floor. Your recreation vehicle is equipped with a propane alarm (refer to the *Safety Precaution sections*, Combination Carbon Monoxide (CO)/Propane Alarm.)

**⚠ WARNING**

Propane cylinders should not be placed or stored inside RV. LP-gas cylinders are equipped with safety devices that relieve pressure by discharging gas into the atmosphere

**Maintenance**

Although your recreation vehicle has been carefully tested at the factory, and by your selling dealer for leakage, travel vibrations can loosen fittings. Have the propane system checked at all connections soon after the purchase of your recreation vehicle, and after the initial filling of the propane tanks.

**NOTE:** All propane lines have been checked with air pressure at the time of manufacture. Dealers are required to recheck and adjust pressure before retail delivery.

Continued periodic checks of the propane system at 5,000 miles of travel (or at least once a year), by a qualified propane service representative as part of your normal maintenance is recommended. Hand tighten the LP gas system valves only, do not use a wrench or pliers as over tightening may damage the valve seals and cause them to leak.

## Propane Leak Test

Leaks may be found easily with a soapy water solution. Do not use a solution containing ammonia or chlorine when locating leaks. These products are corrosive to copper gas lines and brass fittings, which could result in deterioration of the copper and brass components.

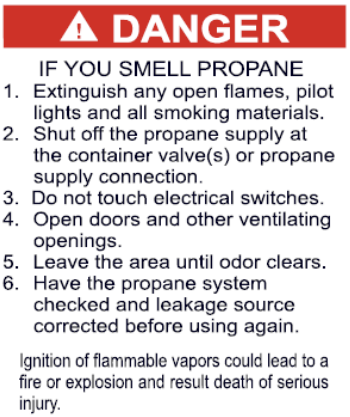
Apply the soapy solution to the outside of the gas piping fittings. If a leak is present, the soapy solution will “bubble” at the leak point. If a leak is indicated, shut off the propane system valve(s) and contact an independent Entegra dealer or qualified propane service representative immediately.

**⚠ DANGER**

**Never use an open flame to test for a propane leak.** Do not check for leaks using products that contain ammonia or chlorine; these products can cause cracks to form on the metal tubing and brass fittings

## Propane Safety Procedure

Propane is a colorless and odorless gas that, in the liquefied state, resembles water. An odorant (usually a sulfur compound) is added as a warning agent. If you smell propane within the vehicle, quickly and carefully perform the procedure listed on the label below.


DANGER
IF YOU SMELL PROPANE
1. Extinguish any open flames, pilot lights and all smoking materials.
2. Shut off the propane supply at the container valve(s) or propane supply connection.
3. Do not touch electrical switches.
4. Open doors and other ventilating openings.
5. Leave the area until odor clears.
6. Have the propane system checked and leakage source corrected before using again.
Ignition of flammable vapors could lead to a fire or explosion and result death of serious injury.

**Propane system label**

When propane container is low, occasionally there may be a concentration of an onion or garlic-like odor, which can be mistaken for a propane gas leak. After the propane container has been refueled, the odor will usually disappear. If not, turn off the valve(s) and have the propane system inspected by your dealer or qualified propane service representative

This label has been placed in the vehicle near the range, for models equipped with a propane system.

## Propane Gas Container

Propane "container" is a general all inclusive term used to describe a vessel that is used for storage and delivery of propane gas. The most common of these are:

DOT (Department of Transportation) cylinders are transportable and are commonly used on recreation vehicles. The capacity of DOT propane cylinders is expressed in pounds. DOT propane cylinders are required to be removed from the recreation vehicle for filling and must be filled by weight by a qualified propane facility. DOT Propane cylinders are equipped with an OPD or Over Fill Protection Device designed to reduce the potential of overfilling. DOT propane cylinders are also equipped with an ACME service valve that is for connection of the TYPE 1 ACME pigtail hose assembly to the RV two-stage regulator.

The TYPE 1 ACME pigtail hose assembly is a wrenchless, user friendly, right hand threaded connector that features a thermally sensitive sleeve and excess flow device. Max output is

200,000 BTU/hr. It is used to connect propane cylinders to regulators, hoses and other fittings. It is not for use on gas grills and other low pressure devices. DOT cylinders equipped with an OPD and ACME type 1 service valve are identified by the triangular service valve knob.

DOT cylinders are typically marked with "top" or an arrow to indicate the correct orientation of the cylinder(s). Do not mount, store or transport any cylinder other than the in proper position indicated.

Be sure to securely re-install DOT cylinder(s) to the recreation vehicle after they have been removed for filling or replacement. Always close the service valve and install a dust cap or plug when transporting or storing disconnected containers whether full or empty.

ASME tanks are permanently mounted to the RV and are commonly used on RV motor homes.

The capacity of ASME tanks is expressed in gallons. ASME tanks are filled while the tank is tank is attached to the motor home by a qualified propane facility. ASME tanks are equipped with an automatic stop fill valve designed to reduce the potential of overfilling. ASME propane tanks are also equipped with a P.O.L. service valve that is for connection of the supply hose with a left hand threaded brass P.O.L. fitting from the tank service valve to the two-stage regulator. Not for use on gas grills and other low pressure devices.

**⚠ WARNING**

DOT propane cylinders must be transported and stored in an upright position so the pressure relief device will function properly. Laying a DOT propane cylinder on its side may potentially create a very dangerous situation.

**NOTE:** Tanks are to be installed, fueled and maintained in accordance to State and Local codes, rules, regulations or laws.

Propane is a true gas compressed into a liquid form. As the fuel is released from the container, it changes to vapor which is then used for the operation of the appliances. Propane will not run through the appliances in the liquid state.

Propane expands 1½ percent for every ten degrees of increase in temperature. It is imperative to leave sufficient space inside the container to allow for natural expansion of gas during warmer weather.

The main shut off valve must be kept closed at all times unless you are using the propane system or filling the propane cylinder. When the cylinder is disconnected from the hose, install the valve cover that is attached to the container.

Close the propane cylinder main shut off valve by hand tightening only. Use of tools creates a potential to over tighten the valve (damaging the interior seals on the cylinder valve seat). If this type of damage occurs, the cylinder will not close properly.

The following label should be kept permanently affixed to your RV.

**WARNING**

THIS SYSTEM IS DESIGNED FOR USE WITH **PROPANE** ONLY.
**DO NOT CONNECT NATURAL GAS TO THIS SYSTEM.**

**BEFORE TURNING ON PROPANE:**

(A) BE CERTAIN APPLIANCES ARE CERTIFIED FOR PROPANE AND ARE EQUIPPED WITH CORRECT BURNER ORIFICES.

(B) MAKE CERTAIN ALL PROPANE CONNECTIONS ARE TIGHT BY TESTING WITH SOAPY WATER. ALL APPLIANCE VALVES ARE TURNED OFF, AND ANY UNCONNECTED OUTLETS ARE CAPPED.

**AFTER TURNING ON PROPANE:**

(A) LIGHT ALL PILOTS.

(B) ALL CONNECTIONS, INCLUDING THOSE AT THE APPLIANCES, REGULATORS, AND CYLINDERS, SHOULD BE LEAK-TESTED PERIODICALLY WITH SOAPY WATER BY THE OCCUPANT. NEVER USE A LIGHTED MATCH OR OTHER FLAME WHEN CHECKING FOR LEAKS.

(C) DO NOT LEAVE SYSTEM TURNED ON OR CONTAINERS CONNECTED UNTIL THE SYSTEM HAS BEEN PROVEN TO BE FREE OF ANY LEAKS.

(D) COOKING APPLIANCES SHOULD NOT BE USED FOR SPACE HEATING.

(E) WHEN THE CONTAINERS ARE DISCONNECTED, THE PROPANE SUPPLY LINE SHOULD BE CAPPED OR PLUGGED.

**AVERTISSEMENT**

CETTE INSTALLATION EST CONÇUE POUR LE PROPANE SEULEMENT.
**NE PAS L'ALIMENTER EN GAZ NATUREL.**

**AVANT LA MISE EN SERVICE:**

(A) S'ASSURER QUE LES APPAREILS SONT CERTIFIÉS POUR LE PROPANE ET MUNIS D'ORIFICES DE BRÛLEUR APPROPRIÉES.

(B) VÉRIFIER L'ÉTANCHÉITÉ DE TOUS LES RACCORDEMENTS AU PROPANE, LA FERMETURE DE TOUS LES ROBINETS D'APPAREILS ET L'OBTURATION DE TOUTES LES SORTIES NON RACCORDÉES.

**APRÈS LA MISE EN SERVICE:**

(A) ALLUMER TOUTES LES VEILLEUSES.

(B) L'OCCUPANT DOIT ÉPROUVER PÉRIODIQUEMENT L'ÉTANCHÉITÉ DE TOUS LES RACCORDEMENTS, Y COMPRIS CEUZ AUX APPAREILS, AUX DÉTENDEURS ET AUX BOUTEILLES, EN Y APPLIQUANT DE L'EAU SAVONNEUSE. NE JAMAIS SE SERVIR D'UNE ALLUMETTE OU AUTRE FLAMMES POUR LA DÉTECTION DES FUITES.

(C) NE PAS LAISSER L'ALIMENTATION OUVERTE, NI LES RÉCIPIENTS RACCORDÉS, AVANT D'AVOIR COMPLÉTÉ L'ÉPREUVE D'ÉTANCHÉITÉ AU PROPANE DE L'INSTALLATION.

(D) LES APPAREILS DE CUISSON NE DOIVENT PAS ÊTRE UTILISÉS POUR LE CHAUFFAGE DES LOCAUX.

(E) LORSQUE LES RÉCIPIENTS SONT DÉCONNECTÉS, L'ALIMENTATION DE PROPANE DOIT ÊTRE OBTURÉE OU SCELLÉE.

JA-105

**"Use propane only" label**
**(Canada only)**

**(Label appearance may not be exact)**

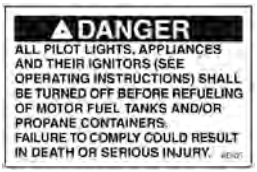
**Servicing or filling**

Have the recreation vehicle checked for leaks at the connections on the propane system soon after the purchase and the initial filling of each propane cylinder. When you have a new cylinder filled for the first time, make sure your propane supplier purges your new cylinder of trapped air. Otherwise, an improper mixture of gas and air will make it impossible to light your propane appliances.

## ⚠ WARNING

Before entering a propane or fuel service station make sure all pilot lights are extinguished. Shut off gas to all appliances by closing the propane gas main shut off valve. Always shut OFF any engine before refueling. Do not smoke and do not operate other ignition sources while refueling.

No one should be inside and only the qualified propane service technician should be near the RV while the propane tank is being filled. The new propane container must be carefully purged for best performance and must NEVER BE OVERFILLED. The following label should be kept permanently affixed to your RV.



**⚠ DANGER**

ALL PILOT LIGHTS, APPLIANCES AND THEIR IGNITORS (SEE OPERATING INSTRUCTIONS) SHALL BE TURNED OFF BEFORE REFUELING OF MOTOR FUEL TANKS AND/OR PROPANE CONTAINERS. FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY.

**"Shut off for re-fueling" label**
**(Label appearance may not be exact)**

The position of the propane container(s) and the hoses are critical to proper operation and propane flow. Follow these instructions to make sure your propane container(s) are connected properly.

## ⚠ WARNING

The pigtail hose must be installed to avoid tension or pulling stress at either end of the hose. Keep the pigtail hose away from sharp edges of the cylinder collar, rigid corners, walls, doors or other compartment structures including the cover.

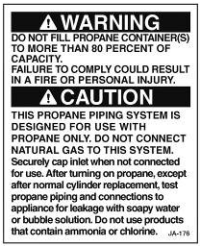
**LP gas container overfill**

Never allow your propane tank to be filled above the maximum safe level as indicated by the fixed liquid level gauge. Do not allow the visible gauge to be used for filling. Overfilling the propane container above the liquid capacity indicated on the container, could allow liquid propane to enter the system that is designed for vapor only creating a hazardous condition.

**⚠ WARNING**

If you suspect your propane container has been overfilled, contact your independent Jayco dealer or a qualified propane technician for assistance immediately. Do not attempt to service a propane container overfill yourself.

The following label should be kept permanently affixed to your RV.


⚠ WARNING
DO NOT FILL PROPANE CONTAINER(S) TO MORE THAN 80 PERCENT OF CAPACITY.
FAILURE TO COMPLY COULD RESULT IN A FIRE OR PERSONAL INJURY.
⚠ CAUTION
THIS PROPANE PIPING SYSTEM IS DESIGNED FOR USE WITH PROPANE ONLY. DO NOT CONNECT NATURAL GAS TO THIS SYSTEM.
Securely cap inlet when not connected for use. After turning on propane, except after normal cylinder replacement, test propane piping and connections to appliance for leakage with soapy water or bubble solution. Do not use products that contain ammonia or chlorine.
JA-176

**"Do not fill to more than 80%" label**
**(Label appearance may not be exact)**

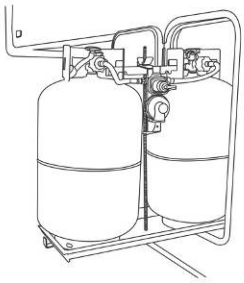
Refer to your Warranty Packet for more information on the LP gas system components.

## *Installing Propane Cylinder(s)*

**⚠ WARNING**

Ensure that all fasteners are secured before traveling.

**Located in a recessed compartment or housing (if so equipped)**



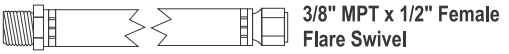
**Two propane cylinders**

1. Connect the 3/8" low-pressure hose to the outlet of the two-stage regulator.
2. Place the cylinder on the bracket in the recess compartment or housing and secure them so the outlets of the cylinder valves are facing the "sidewalls" of the compartment or housing (opposite of each other).

3. Mount the regulator on the center back wall of the compartment or housing so the vent is pointed downward.
4. Attach the 1/4" inverted flare x 18" Type-1 pigtail hose to the regulator inlet and the right hand swivel nut to the cylinder valve.

**Main Supply Hose – Low Pressure**

Attach the main supply hose from the regulator to the brass manifold fitting in the frame of the trailer. The swivel brass nut on the main hose will be your final attachment.




**Main supply hose**

Several things to remember each time the propane container is removed:

1. Check that ALL fittings are tight.
2. Check that ALL connections are tested with a propane leak detector (or soapy water) solution.
3. Open the main valve slowly to avoid a fast rush of propane to the excess flow valve causing propane freeze up. If you experience a propane "freeze-up," close the main valve and wait at least fifteen (15) minutes before trying again. Refer to the regulator manufacturer's operator manual.
4. Listen carefully - a "hissing" sound longer than one second may indicate a propane leak. If you feel there may be a leak present, close the valve and contact your dealer or qualified propane technician for repair assistance.

Replace all protective covers and caps on the propane system after filling. Make sure the valve is closed and the compartment door is securely latched.

**Maintenance**

Propane gas is normally non-corrosive - you need not worry about the inside of your container. However, the outside should be kept free from rust by a periodic coat of paint in a light reflective color. Rust, scratches and/or dents can affect the safety of the cylinder. Inspect the cylinder at regular intervals.

If there is a problem, have it evaluated by a qualified technician and discard it. DOT requires that a visual inspection be made prior to each filling.

Any cylinder that has been exposed to fire, leaks or seems damaged should not be refilled.

Do not attempt to repair any containers, container valves, regulator or appliances by yourself. Use only trained certified propane gas service technicians to perform repairs.

**Propane cylinder recertification**

If you have an older RV you should know that, according to Federal law, DOT cylinders may only be used for 12 years after their manufacture date (the number of years for certification may vary in your area). After that, the cylinders must be "recertified" which provides another five years of use.

The cylinders can be recertified every five years thereafter. Federal DOT (Department of Transportation) regulations require periodic inspections and re-qualifications of the propane cylinders. DO NOT USE damaged or rusted containers.

Verify with your local propane dealer that all required inspections and certifications have been completed on the propane cylinder within the correct time period before refilling the cylinder.

Have the LP system checked for leakage each time a cylinder is refilled or after any part of the propane system has been disconnected.

**Hoses, Pipes, Tubes & Fittings**
The hoses, pipes, tubes and fittings used in your propane system are designed to withstand pressures exceeding those of the propane system. However, because environment and time can both contribute to the deterioration of these components, they must be inspected for wear at regular intervals.

Be sure to inspect the hose before each season and when having the tank refilled. Look for signs of deterioration such as cracks or loss of flexibility. When replacing the hose or other propane components, make sure to always replace them with components of the same type and rating (check with your dealer).

Fittings are used to connect the various system components to each other. The P.O.L. fitting at the end of the propane supply hose is made of brass so that pipe sealants are not necessary to prevent leaking.

It also has a left-handed thread, which means that it is turned clockwise to remove, and counter-clockwise to tighten. The P.O.L. fitting has been designed to help restrict the flow of LP gas in the event of a regulator failure or hose malfunction.

## Propane Regulator

**⚠ WARNING**

Propane regulators must always be installed with the regulator vent facing downward. Regulators that are not located in baggage compartments have been equipped with a protective cover. Make sure the regulator vent faces downward and (if applicable) the cover is in place to minimize vent blockage that could result in excessive gas pressure causing fire or explosion.

**Single stage regulator**
Some models are equipped with a single stage regulator.

**Two stage regulator**
The two-stage regulator has the only moving components in the propane system. Its sole function is to reduce the pressure from the propane containers to a safe and consistent low operating pressure. The first stage reduces the container pressure to 10-13 lbs. The second stage reduces the 10-13 lbs. of pressure further to an operating pressure of 11" W.C. (water column) or 6.35 oz. of outlet pressure to your appliances.

The second stage is adjustable and will need to be adjusted by your dealer or qualified propane service technician for optimum performance (this adjustment should always be made with a properly calibrated manometer).

If the pressure is too high, it affects performance and safety; if the pressure is too low, your appliances will not operate correctly.

If your recreation vehicle is equipped with the "automatic" two-stage regulator, with both

cylinders full of propane, turn the lever on the regulator towards the cylinder you wish to use first. This will now be the "supply" cylinder and the other the "reserve." Slowly open both cylinder valves. The indicator on top of the regulator will turn bright green. When the cylinder becomes empty, the indicator will change to bright orange. Now turn the regulator lever to the side of the "reserve" cylinder and the green signal should return. You may now remove the empty cylinder to have it refilled without interrupting the flow from the full bottle. After filling the cylinder, connect the pigtail hose and slowly open the bottle valve.

## Using The Propane System

After your recreation vehicle is completely set up and you are prepared for camping enjoyment, use the following steps for propane operation:

1. Close ALL burner valves, controls and pilot light valves.
2. Open the main valve in the propane tank slowly to avoid a fast rush of propane vapor through the excess flow valve causing propane "freeze-up." Should you experience propane "freeze-up," close the main valve and wait 15 minutes before trying again.
3. Listen carefully as propane begins to flow. If a hissing noise is heard for more than one or two seconds, close the main valve and contact your recreation vehicle dealer to have the propane system tested.
4. Light the appliances as needed and directed in the appropriate appliance manufacturer's owner manual located in the Warranty Packet.

Keep the propane container valves closed at all times unless you are using the propane gas system or are having the propane container filled.

**Make sure that you read and fully understand ALL safety requirements for handling and operation of the propane system.**

The Warranty Packet contains manufacturer's user guides for the various appliances hooked to your propane system.

The propane system provides added benefits to your camping enjoyment; however, it must be handled with care. If you have any questions or concerns, consult with your dealer and/or the specific manufacturer.

If you have double cylinders on your recreation vehicle, use only one at a time. Otherwise, the propane supply will be drawn equally from both cylinders until the supply has been totally exhausted. Using one cylinder until it is empty, then using the second cylinder will allow you to fill the empty cylinder at your convenience without running totally out of propane.

## Calculating Propane Gas Usage

It is important to remember that your furnace, refrigerator, water heater and range all may use propane gas to operate. Each has a different BTU rating, and you will need to consider them to determine how long your propane supply will last. Most RV gas appliances are operated intermittently. Propane consumption depends on individual use of appliances and the length of time operated. Unless there is heavy use of hot water, the water heater consumption of propane is minimal. During cool temperature or high wind conditions, furnace consumption can be extremely high.

To calculate your propane supply, take the BTU ratings for your propane appliances and divide that into the BTU availability. Each gallon of propane gas (3.785 liters) produces about 91,500 BTU's (96,528 kilojoules) of heat energy.

**Propane consumption chart**

The following chart provides average propane consumption information.

| Appliance | Average BTU Consumption per Hour | Kilojoules/Hour |
|---|---|---|
| Water Heater | 8,800 | 9,280 |
| Refrigerator | 1,200 – 1,500 | 1,270 – 1,580 |
| Furnace | 35,000 – 40,000 | 36,930 – 42,200 |
| Range/oven | 7,100 | 7,490 |
| Range, rear burner | 6,500 | 6,860 |
| Range, front burner | 9,000 | 9,490 |
| Outside Grill | 10,000 | 10,550 |

## *Cooking With Propane Gas*

**⚠ WARNING**

Do not turn gas range burner controls to ON and allow gas to escape before lighting.

**⚠ WARNING**

Do not use portable fuel burning equipment (i.e., wood and charcoal grills or stoves) inside the recreation vehicle.

Unlike homes, the amount of oxygen supply is limited due to the size of the recreation vehicle. Proper ventilation when using the cooking appliance(s) will help you avoid the danger of asphyxiation.

**It is especially important that cooking appliances not be used for comfort heating, as the danger of asphyxiation is greater when the appliance is used for long periods of time. FAILURE TO COMPLY MAY RESULT IN DEATH OR SERIOUS INJURY.**

The following warning labels are located in the cooking area to remind the user to provide an adequate supply of fresh air for combustion.

TO ENSURE A SUPPLY OF FRESH AIR TO OCCUPANTS, OPEN VENTILATORS WHEN FUEL BURNING RANGE, FUEL BURNING CARRY-ON APPLIANCE, AND/OR FUEL BURNING LIGHTS ARE IN OPERATION. COOKING APPLIANCES SHOULD NOT BE USED FOR SPACE HEATING PURPOSES.
DE MANIÈRE À ASSURER UNE ALIMENTATION EN AIR FRAIS AUX OCCUPANTS, OUVRIR LES VENTILATEURS LORSQUE LA CUISINÈRE, LES APPAREILS DE CHAUFFAGE PORTABLES ET/OU LES LAMPES DE COMBUSTION D'HUILE SONT EN FONCTIONNEMENT. LES APPAREILS DE CUISSON NE DOIVENT PAS SERVIR AU CHAUFFAGE DES LOCAUX.
JA-110

**Ensure a supply of fresh air (Canada units only)**

The following warning labels are located in the cooking area to remind the user to provide an adequate supply of fresh air for combustion.

DANGER
Do not use gas cooking appliances for comfort heating. Can lead to carbon monoxide poisoning, which can lead to death or serious injury.
WARNING
Gas cooking appliances need fresh air for safe operation.
Before operating:
Open vents or windows slightly or turn on exhaust fans prior to using cooking appliance. Gas flames consume oxygen, which should be replaced to ensure proper combustion. Improper use can result in death or serious injury.

**Cooking / comfort heating label**

## Traveling with Propane

Use care when fueling your tow vehicle. Make certain your propane container is properly fastened in place.

Some states prohibit propane appliances to be operated during travel, especially in underground tunnels. Make sure you know the laws for the areas where you travel.

The label listed below should be kept permanently affixed to your recreation vehicle:

DANGER
ALL PILOT LIGHTS, APPLIANCES AND THEIR IGNITORS (SEE OPERATING INSTRUCTIONS) SHALL BE TURNED OFF BEFORE REFUELING OF MOTOR FUEL TANKS AND/OR PROPANE CONTAINERS.
FAILURE TO COMPLY COULD RESULT IN DEATH OR SERIOUS INJURY.

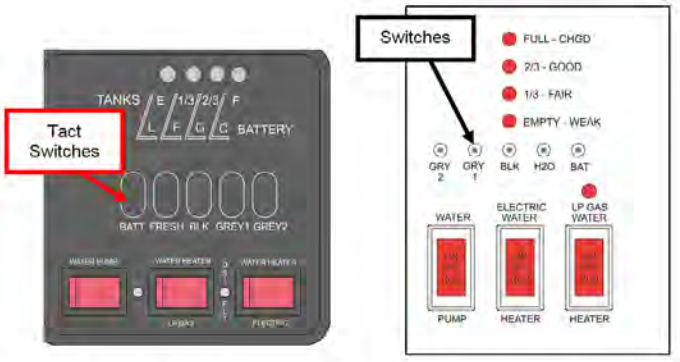
**Re-fueling Warning Label**

**There** are two different water systems in your recreation vehicle:

- The fresh water system consists of the fresh water holding tank, fresh water connections, water pump, outside shower assembly (if so equipped), water heater, faucets, tub/ shower, and water purification system (if so equipped).
- The waste water system consists of the waste water holding tank, sewage holding tank, drains and toilet.

### *MONITOR PANEL (IF SO EQUIPPED)*

The interior wall-mounted Monitor Panel allows you to monitor the fresh water, grey water, black water and auxiliary battery levels. These functions are controlled using the "tact" switches located on the monitor panel faceplate. The Monitor Panel operates on 12-volt DC power supplied by either the converter or auxiliary battery. No power is drawn from the battery unless a switch is pushed or turned ON. Fuses for the Monitor Panel are located in the Load Center. Refer to the manufacturer's operators manual for further information.




**Monitor Panel** **Command Center Panel**

(Monitor panel appearance may vary)

**Operation**

Press only one "tact" switch at a time. As you push either the "FRESH", "BLK" "GREY1" or "GREY2" switch, one or more LED lights will illuminate (from left to right) indicating the content level for that tank. When pushing the "BATT" switch, the LED lights illuminate from left (lowest) to right (highest) to indicate the estimated auxiliary battery condition.

**NOTE:** When using shore power all 4 LEDs will light. If disconnected from shore power, 3 LEDs will light to indicate a full charge. (The 4th LED may blink)

The LEDs corresponding to the letters C,G,F,L on the panel indicate the following:

| | | |
|---|---|---|
| C | = | Charge at 12.7 volts |
| G | = | Good at 12.1 volts |
| F | = | Fair at 11.6 volts |
| **L** | = | **L**ow at 6.0 volts. |

**Water pump switch (if so equipped)**
The red water pump switch is located on the Monitor Panel, the Utility Center or both (depending on your model). When the water pump switch is ON, the water pump will run until it reaches 45 lbs. of pressure. It will recycle when pressure drops. The switch will light up when it is turned ON. Turn the switch OFF when the water pump is not being used.

**Water heater switches (if so equipped)**
These red switches are located on the Monitor Panel. The "LP GAS" water heater switch (12V) enables propane operation of the water heater. The "ELECTRIC" water heater switch (120V) enables electric operation of the water heater. Normally both switches should be turned on to provide the fastest hot water recovery time. The water heater can be operated in electric only or gas only modes by pressing each switch independently. The switches will light up when turned ON.

**DSI FLT - Direct Spark Ignition Fault (if so equipped)**: This light located between the water heater switches will indicate a problem with the LP portion of the water heater. When the LP GAS switch is turned on, the light will blink quickly 3 times and the water heater will ignite. The light will then remain off. If the light comes on and stays on, it indicates the gas side of the water heater has not fired and there is a problem with the igniter.

## Fresh Water System

All water contains contaminant and mineral particles that can cause fresh water system odors. Untreated well water is a major source of water system odors. The fresh water (or potable water) system needs periodic sanitization and winterization to take care of all the components within the plumbing system and help discourage the growth of bacteria and other organisms that can contaminate the water supply.

**⚠ WARNING**

DO NOT drink water deemed microbiologically unsafe or of unknown quality..

**⚠ WARNING**

Never travel with full fresh, black or grey water holding tanks..

## Fresh Water Holding Tank

There may be several ways to fill the fresh water tank depending on the model. For details of each method, refer to the *Fresh Water Connections* or the *Utility Center (if so equipped)* sections. There are plastic overflow tubes plumbed into the fresh water holding tank. They allow water to flow out of the water tank (refer to the *City Water Fill* section). Occasionally, you may see water coming from the overflow tubes when the fresh water holding tank is filled. This is normal, and is caused by external circumstances, including the recreation vehicle being parked on an incline, or the motion caused by starting or stopping the recreation vehicle during travel.

**⚠ CAUTION**

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

**⚠ CAUTION**

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

## 12-Volt Water Pump & Switch

When you want to use water in your recreation vehicle and it is not hooked up to city water, you will need sufficient 12-volt DC power to run the water pump.

Once activated, the water pump (also known as the demand pump) will self-prime, and provide water. The pump is designed for intermittent use only. Using the pump continuously or with high pressure will shorten the life of the pump and is not covered in your warranty.

Periodically check the in-line water pump strainer for accumulated debris. To clean, shut off the water pump, unscrew the clear cap, remove the re-useable metal strainer and clear any debris, then reinstall.

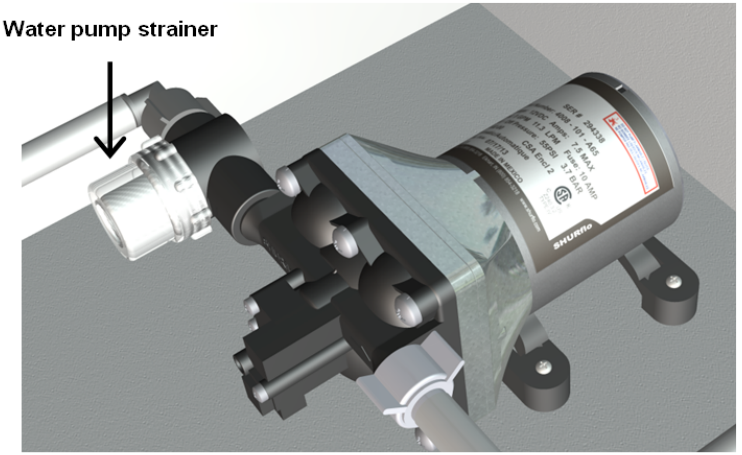
For additional information on the care and operation of the pump, read the safety and operating information in the pump manufacturer's owner's manual.

**Water Pump Switch (if so equipped):**
Most water pump switches illuminate when the water pump is activated. In most models, the (red) pump switch is located on the monitor panel or the utility center. When the water pump switch is ON the pump runs until 45 lbs. of pressure has been achieved. The red light will stay on. The water pump automatically recycles when pressure drops. Some cycling may occur depending on the volume of water being released. Turn the water pump switch OFF when it is not in use.

**NOTE:** If there are multiple pump switches; the pump must be turned off from the same switch used to turn it on. (e.g. if the pump is turned on at the utility center, it cannot be turned off with the switch inside the RV at the command center)

**NOTE:** In some models the water pump switch will be a black rocker switch located near the sink cabinet.

**The water pump switch should be in the OFF position when the RV is left unattended for any amount of time. If something would happen to the water system, this may help limit water damage to a smaller area.**




**Water Pump**

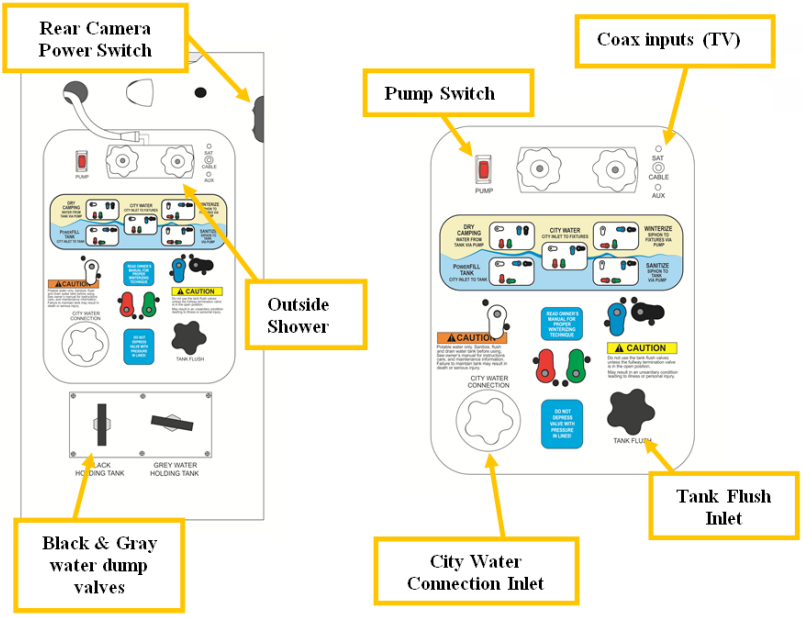
## Water Pressure Regulator (customer Supplied)

Excessive pressure from the water supply source may be encountered in some parks, especially in mountain regions when using the fresh water inlet or black tank flush. Water pressure regulators are available to protect your recreation vehicles plumbing system against such high pressure.

**⚠ CAUTION**

A water pressure regulator is recommended to prevent damage to the plumbing system or components. To prevent damage when using the city water connection, a 45 lb. (315 KPa) rated water pressure regulator is recommended.

## Uni-Dock Utility Center (If So Equipped)




Uni-Doc Utility Center

The Uni-Doc Utility Center is located in an exterior compartment in your recreation vehicle and allows you to perform the following functions:

1. Power fill the fresh water tank for remote or dry camping.
2. Use the pump to supply water to fixtures from the fresh water tank.
3. Use the pump to siphon fill or sanitize the fresh water tank from a bucket.
4. Connect to city water at the camp site to supply water to RV fixtures.
5. Winterize the plumbing lines and fixtures.
6. Bypass the hot water heater when winterizing to avoid damage to the water heater.
7. Rinse the black tank to help control odors and prevent sewage buildup.
8. Rinse off items outside the unit with hot/cold faucet.
9. Connect up to 3 coax lines with satellite, cable and auxiliary.

The City Water Connection inlet is located in the Uni-Dock Utility Center**.** Use a non-toxic drinking water hose dedicated only to supplying the RV with fresh water. To reduce the chance of contamination, prevent the non-toxic drinking water hose from coming into contact with the ground. Install the City Water Connection inlet cap when the fresh water connection is not being used.

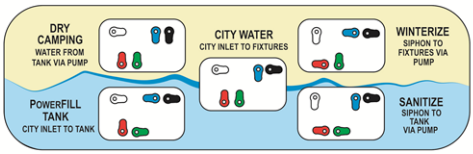
The fresh water connection should be disconnected (i.e., the non-toxic drinking hose disconnected) when the RV is unattended for any amount of time. If something would happen to the water system, this may help limit water damage to a smaller area.

Do not remove the Potable Water Label.

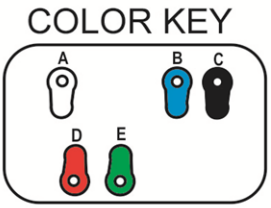
**Using the Uni-Doc Utility Center:**

> **⚠ WARNING**
>
> A check valve is located inside the City Water Connection inlet on the Utility Center. **NEVER depress the check valve on "CITY WATER CONNECTION" inlet with pressure in the line.** It will cause irreparable damage to the valve function and the inlet will leak water.

The following information details the functions of the utility center water valves as displayed on the valve operation label located on the Utility Center front panel.




Valve Operation Diagram




Valve Color Code

**"POWER FILL TANK" (Pressurized fresh water source)**

1. Connect the fresh water hose to the City Water Connection inlet on the Utility Center.
2. Set the colored valves to POWER FILL TANK setting:
   - □ (A) White handle pointing right
   - □ (B) Blue handle pointing left
   - □ (C) Black handle pointing right
   - □ (D) Red handle pointing up
   - □ (E) Green handle pointing right

3. Connect the other end of the hose to a pressurized fresh water source (faucet or spigot).
4. Turn pressurized water source ON, the tank should begin filling.
5. When water has reached the desired level, turn the pressurized water source OFF.
6. Disconnect water source from the spigot/faucet first, then disconnect from the City Water fill inlet on the utility center.

**"SANITIZE" (or Siphon Fill) the Fresh Water Tank via Pump:**

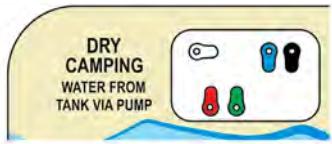
> **NOTE:** Refer to the Sanitizing Plumbing System section before starting this process.

1. Connect a garden hose to the City Water inlet (do not use your fresh water hose to sanitize the water lines or the tank)
2. Set the colored valves to the SANITIZE setting:
   - □ (A) White handle pointing down
   - □ (B) Blue handle pointing down
   - □ (C) Black handle pointing right
   - □ (D) Red handle pointing left
   - □ (E) Green handle pointing right
   - □ The water heater is automatically bypassed on this setting.

3. Place the other end of the hose in a container holding sanitizing solution.
4. Turn the pump switch ON.
5. Fresh water tank should begin drawing solution out of the container. To aid siphoning place the container on a surface approximately 2 feet off the ground.
6. Continue pumping until solution is drawn out of the container, or tank is at the desired level.
7. Turn the pump Switch OFF.
8. Disconnect the garden hose from the City Water Fill inlet on the Utility Center.

**"DRY CAMPING" (Pump supplies water from the fresh water tank):**

1. Make sure the fresh water tank has an adequate supply of water.
2. Set the colored valves to the DRY CAMPING setting:
   - □ (A) White handle pointing right
   - □ (B) Blue handle pointing down
   - □ (C) Black handle pointing down
   - □ (D) Red handle pointing up
   - □ (E) Green handle pointing up

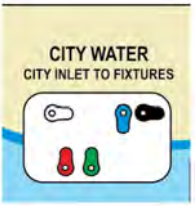



3. Turn the pump switch ON.
4. Water should be available to all fixtures now.
5. Turn pump OFF when water is not being used.

**NOTE:** To fill the fresh water tank without a pressurized water source, refer to SANITIZE (Siphon Fill) section above, and use a container holding fresh potable water and a hose. Water will be drawn into the tank by the pump. There is no gravity fill inlet on the recreation vehicle.

**"CITY WATER" (Pressurized fresh water source)**

1. Connect the fresh water hose to the City Water inlet.
2. Set the colored valves to the CITY WATER setting:
   - □ (A) White handle pointing right
   - □ (B) Blue handle pointing down
   - □ (C) Black handle pointing right
   - □ (D) Red handle pointing up
   - □ (E) Green handle pointing up




3. Connect other end of the hose to the pressurized fresh water source.
4. Turn ON the pressurized water source.
5. Water should now be available to all fixtures.

**NOTE:** To disconnect: Turn off water at the pressurized source first, disconnect hose from the water source, (to release pressure off the system) then disconnect the hose at the City Water Connection on Utility Center last.

"WINTERIZE" (plumbing lines and fixtures via pump)
**(**Refer to the *Winterizing Plumbing System* section before starting the winterizing process**).**

1. Connect a garden hose to the City Water inlet (do not use your fresh water hose to winterize the water lines)
2. Set the colored valves to the WINTERIZE setting:
   - □ (A) White handle pointing down
   - □ (B) Blue handle pointing left
   - □ (C) Black handle pointing right
   - □ (D) Red handle pointing left
   - □ (E) Green handle pointing up
   - □ The water heater is bypassed automatically on this setting.

3. Insert the other end of the hose in a container holding RV antifreeze.
4. Turn the pump switch ON.
5. Antifreeze should begin flowing into the plumbing lines and fixtures. (The pump will run when a faucet or the toilet is in use.) To aid in siphoning place the container on a surface approximately 2 feet off the ground.
6. Open one plumbing fixture, keeping it open until antifreeze appears then close it. Repeat for each plumbing fixture (including the hot & cold lines on the outside shower)
7. Turn the pump OFF when all fixtures have been winterized.
8. Disconnect the hose from the City Water Connection Inlet. (it is normal for some antifreeze to exit the inlet hose as it is being disconnected)
9. Leave the valves set on WINTERIZE setting.

## Water Purification System (If So Equipped)

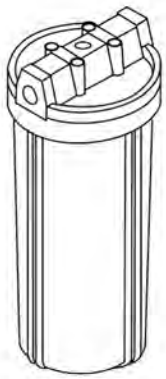
Depending on the model, your recreation vehicle may have a full canister style water purification system. If the water supply has not been used for some time, allow the water to flow for several minutes to flush the system.

**NOTE:** Filters should be replaced at the beginning of each camping season or if they have come into contact with contaminated water.

**NOTE:** When not in use, the water filter cartridge should be stored out of freezing temperatures. RV antifreeze will damage the water filter cartridge.

**To Replace Filter Cartridge**

1. Turn off water supply.
2. Place drip pan below filter housing to catch any spillage.
3. Press the red button on top of the filter housing to release pressure.
4. Using a spanner wrench, rotate the filter housing. Unscrew the housing completely and remove the filter (dispose of the old filter properly.
5. Clean the inside of the filter housing with mild detergent. Thoroughly rinse and wipe clean.
6. Remove the o-ring from the groove in the housing and wipe clean. Recoat with petroleum jelly.
7. Replace the o-ring in the groove, making sure it is properly seated.
8. Install the new filter cartridge.
9. Replace the canister housing (hand tighten is normally sufficient).
10. Turn on the water supply and check for leaks.



**Filter housing**

**NOTE:** There is **no bypass** feature on a canister style water filter. The water filter **must** be removed before sanitizing or winterizing the RV.

Each new RV is winterized with RV antifreeze before it is shipped to the dealer. To use the water purification system: full system canister water lines need to be flushed of antifreeze

and then the filter installed in the canister before use.

Refer to the manufacturer's owner's manual and the label on the water filter cartridge for further information.

**⚠ CAUTION**

- ☐ Do not allow the filter housing to freeze.
- ☐ Remove the cartridge before using anti-freeze to winterize the system or chlorine solution to sanitize the system.
- ☐ Flush housing thoroughly before it is put back into service after winterizing or sanitizing.
- ☐ For best results replace cartridge every 6-12 months.
- ☐ Do not use carbon cartridges where water is microbiologically unsafe or of unknown quality.
- ☐ Maximum operating pressure is 125 psi (8.75 bar).
- ☐ Maximum water temperature is 125° F (52° C).

## Water Heater

The water heater is designed to heat water quickly and efficiently. The water heater manufacturer has preset the sensing limit to maintain the water temperature when the water heater is activated.

**⚠ WARNING**

Hydrogen gas may result if you have not used the water heater for two weeks or more. **HYDROGEN GAS IS EXTREMELY FLAMMABLE.** To reduce the risk of injury under these conditions, open the hot water faucet for several minutes at the kitchen sink before you use any electrical appliance connected to the hot water system. If hydrogen is present, you may hear what sounds like air escaping through the pipe as the water begins to flow. Hydrogen gas may be present even after water has been drained from the water heater tank. Open the faucet at the sink and allow the system to vent for five to ten minutes. Do not smoke or have any open flame near the open faucet while venting. On DSI water heater models, make sure the switch is OFF.

**⚠ WARNING**

Do not replace any component part with an accessory part that is not authorized by the water heater manufacturer, such as an "add-on" electric heating element. Such items are not approved to be installed and could create an unsafe condition and will void all warranties.

**Operating instructions:**

**⚠ WARNING**

If you smell propane gas then STOP! and follow the procedures listed in the Fuel Systems section of this manual before attempting to operate the water heater.

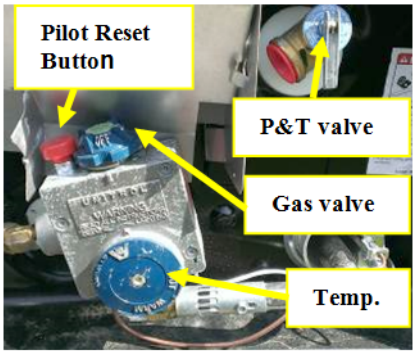
Read the safety and operating information provided in the manufacturer's manual before attempting to activate the water heater.

Make sure the water heater is filled with water before use; even momentary operation of the water heater without water in it may result in damage to the tank heating element and/or controls. Double check the bypass valves, make sure they are set properly.

Always open both the hot and cold water faucets when filling the fresh water tank to allow air pockets to be forced out of the water heater

**Water heater switch (if so equipped)**
The "propane GAS" water heater switch enables propane operation of the water heater. The "ELECTRIC" water heater switch enables electric operation of the water heater

**Water heater-pilot light (if so equipped)**
This water heater is gas only with a pilot ignition. The water heater controls are typically located in an outside compartment, and is ignited manually from the outside of the vehicle. Hot water will be available in approximately 30 minutes.




**Water Heater pilot ignition**

Refer to the water heater manufacturer's manual for lighting instructions.

**Water heater bypass (If So Equipped)**
Your recreation vehicle may be equipped with a water heater bypass. This three-valve system is located at either the water heater, or on the system panel depending on your model. For detailed information see the *Water Heater Bypass* section

**Water heater switches (if so equipped):**
Switches are located on the Monitor Panel. For detailed information on their operation refer to the *Monitor Panel* section.

**Odor from the hot water system**

Many water supplies contain sufficient amounts of sulfur to produce an odor, often called "sulfur water." Sulfur water can be caused by a chemical action or by bacteria. Generally, sulfur water is not harmful, only unpleasant to smell. Refer to the water heater manufacturer's owner's manual for details on eliminating the odor from sulfur water. Odor from sulfur water is not a service problem.

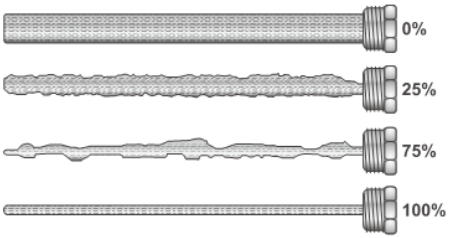
**⚠ WARNING**

Do not replace anode rod or any other component with an accessory part that is not authorized by the water heater manufacturer, such as an "add-on electric heating element. Such items are not approved to be installed and could create an unsafe condition and will void all warranties

**Anode rod protection**

The tank in the water heater is protected by a magnesium or aluminum anode to prolong the life of the tank by absorbing the corrosive action of hot water. Under normal use, the anode rod will deteriorate and because of this, the water heater manufacturer recommends the anode rod be replaced yearly. Water with high levels of iron and/or sulfate will increase the rate of deterioration; therefore, more frequent replacements may be required.

If an anode rod is mostly eaten away, replace it with a new one. The water heater manufacturer recommends replacement of the anode rod when consumption or weight loss is greater than 75 percent.




**Anode rod replacement chart**

Operating the water heater without the proper anode rod protection will decrease tank life and will void the tank manufacturer's warranty on the tank. To extend the anode life, drain the water from the water heater tank whenever the RV is not being used. Avoid any extended time of non-use with water in the tank.

To prevent a water leak when replacing the anode rod, a pipe thread sealant approved for potable water (such as Teflon Tape) must be applied to the threads of the anode rod. Proper application of a thread sealant will not interfere with the anode's

**High altitude deration**

Operation of the water heater at high altitudes may require derating. If the water heater is not properly derated, lack of sufficient oxygen for combustion may produce improper burner operation. Pilot outage caused by burner lift-off or sooting from a yellow burner may occur, indicating the possibility of carbon monoxide.

You may also notice a lack of efficiency in heating the water because of incomplete combustion of the burner at these higher altitudes.

Consult with the local propane company, your dealer or the water heater manufacturer for proper derating of the water heater. Change out of the orifice (derating) should be done by the dealer or a qualified service agency.

**NOTE:** It is important that once the RV has returned to lower elevation (below 4500 feet) any high altitude deration or other adjustments be reversed for proper operation of the water heater.

**Pressure & temperature relief valve**

**⚠ WARNING**

Do not place a valve between the pressure and temperature (P&T) valve and the tank. Do not remove or plug the relief valve under any circumstances.

The temperature and pressure relief valve is designed to open if the temperature of the water within the heater reaches 120° F, or if the water pressure in the heater reaches 150 pounds. When this pressure is reached, the pressure relief valve will open and water will drip from the valve.

This "weeping" or dripping will continue until the pressure is reduced to below 150 pounds, and the valve closes. This condition is normal and does not indicate a defective relief valve.

One way to reduce the frequency of this occurrence is to maintain an air pocket at the top of the water heater tank. This air pocket will form in the tank by design; however, it will be reduced over time by the everyday use of your water heater. To replenish this air pocket:

1. Turn off the water heater.
2. Turn off the cold water supply line.
3. Open a faucet in the recreation vehicle.
4. Pull out the handle of the pressure relief (P&T) valve and allow water to flow from the valve until it stops.
5. Release the handle on the P&T valve - it should snap closed.

Close the faucet and turn on the cold water supply. As the tank fills, the air pocket will develop. Repeat this procedure as often as needed to reduce the frequency of the weeping P&T valve.

**Maintenance**

Do not allow the burner to burn with a yellow flame, or continue to operate the water heater with an improper burner flame.

Periodically, inspect the water heater vent for soot. Soot is a sign of incomplete combustion and must be corrected before operating the water heater. This is your visual warning that the

water heater is operating in an unsafe manner. If soot is present, immediately shut the unit down and contact your dealer or a qualified service agency.

Periodically inspect the vent for obstructions. Do not terminate the vent on your water heater inside of add-on rooms, screen porches or patios. Doing so will result in products of combustion being vented into the rooms or occupied areas.

**Draining and winterization:**
If the recreation vehicle is to be stored over the winter months, the water heater must be drained to prevent damage from freezing. Damage to the water heater caused by freezing is not warrantable. It is recommended the water heater be drained and bypassed during the winterization process, particularly if introducing RV antifreeze into the plumbing system. The water heater should never be drained when HOT or UNDER PRESSURE.

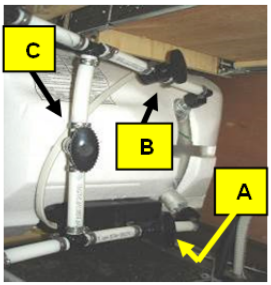
To drain the water heater:

6. Turn off electrical power to the water heater either at the switch from the electrical element of at the breaker.
7. Shut off the propane supply to the water heater.
8. Turn off the water pump.
9. Open both hot and cold water faucets.
10. Remove the anode rod from the tank.

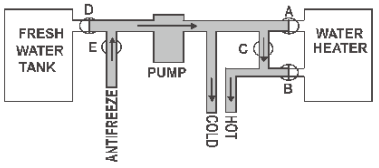
For detailed information see the *Winterizing The Plumbing System* and *Water Heater Bypass* sections of this manual.

## Water Heater Bypass Valves (If So Equipped)

Most floor plans have a factory installed water heater bypass which enables you to avoid filling the water heater with RV antifreeze. Bypass valves are typically located in close proximity to the water heater. Outside utility centers (if so equipped) operate differently than a factory installed bypass system. Refer to the *Outside Utility Center* section for details.




Factory installed water heater bypass




**Normal Camping Usage:** Valves A&B Open
Valve C is Closed

**Bypass Mode:** Valves A&B Closed
Valve C is Open

Water Heater Bypass Diagram

**NOTE:** In the Water Heater Bypass Diagram, valve D is the fresh water tank shutoff. Valve E is used to introduce RV antifreeze into the lines when winterizing the system and has a clear hose attached to it. See Winterizing the Plumbing System in this manual. Valves D & E are typically located in the vicinity of the water pump which can be under a dinette bench, kitchen island, or bed.

**Water heater switches (if so equipped):**
The water heater switches are located on the monitor panel. Refer to the *Monitor Panel* section of this manual for function details.

## Outside Shower (If So Equipped)

A handheld shower assembly with both hot and cold water may be included for use outside of your recreation vehicle.

1. Be sure the water heater is ON and had sufficient time to heat the water.
2. Open the outside shower compartment door.
3. If dry camping, be sure the 12-volt water pump is ON.
4. Remove the handheld shower from its holder.
5. Turn ON the hot and cold faucet knobs, and adjust the water temperature as desired.
6. To activate the handheld shower turn ON the sprayer head attachment (some models).

To turn off the water, ***always*** close the faucet knobs. The lever on the shower head will not completely stop the flow of water; this is intentional to allow for draining. After the water has been allowed to drain from the shower head, return it to the outside shower compartment. Any remaining water in the shower hose will drip or run out; this is not a leak but performs as intended. If you are dry camping, turn the water pump OFF.

Water should ***always*** be turned off using the hot / cold control knobs rather than turning off the water with the lever on the shower head. Turning off the water with the shower head lever can create a condition where the hot and cold water will mix through the outside shower faucet, thereby reducing the temperature of the hot water. It can appear as though the hot water heater is not working properly.

**NOTE:** The shower head may be removed from the hose so that it will drain faster. If you remove the shower head, be sure to reassemble it prior to storage.

**NOTE:** When putting the shower assembly back into the storage compartment, make sure the hose is not pinched or the shower head is positioned in a way it can be damaged.

## Faucets

The faucets operate much the same way as the faucets in your home. Make sure there is sufficient water available and, if dry camping, the 12-volt water pump is turned ON before operating.

To open the faucets, turn the hot and cold knobs ON and adjust the temperature to your comfort level. Close the faucets when a sufficient amount of water is released, turn the water pump OFF if dry camping

**⚠ WARNING**

Water temperatures over 125°F (49°C) can cause severe burns instantly or death from scalds; therefore, be careful when using hot water. Always test the water temperature before showering or washing.

## Bathroom Tub / Shower

The shower faucet includes a vacuum breaker for the shower. There are two purposes for this breaker:

- To prevent siphoning water through the hose from another fixture.
- To prevent water from being retained in the hose.

The showerhead DOES NOT have a complete shut-off valve (the complete shut-off is at the faucet). The showerhead may drip slightly in the OFF position after use; this is normal and does not indicate a leak or defect.

There may be air in the plumbing lines that will need to be bled out before a steady stream of water comes from the faucet.

The bathing facilities in your recreation vehicle function similar to those in your home. Keep the water heater and holding tank capacities in mind when using the fresh water system. Long showers are not suggested due to the limited amount of water available. The used water will drain through the plumbing pipes into the grey water holding tank.

1. Be sure the water heater is ON and had sufficient time to heat the water.
2. If dry camping, be sure your 12-volt water pump is ON.
3. Adjust the hot and cold faucets to the desired temperature before bathing.
4. To conserve water while showering, wet down and turn the water OFF while you use soap, then rinse.
5. When you are finished, shut the water faucets OFF.

Unlike your home, the recreation vehicle does not contain a water pressure balance valve. If someone is using the shower, it is recommended that the fresh water system NOT BE USED until they are finished.

**Maintenance**

Read the manufacturer's operator manual or label instructions. The tub/shower walls (if applicable) in your recreation vehicle are made of ABS plastic material. Use a mild detergent soap and warm water to clean. Contact your RV dealer for repair or replacement.

Do not use gritty or abrasive particle soaps or scouring compound to clean ABS plastic. Avoid using "Citrus" or biodegradable cleaners which contain "D-Limonene." They will damage plastic materials.

## Hardware & Sink or Shower Fixtures

Use mild dish soap and water to clean these fixtures. Do not use harsh chemicals or sprays. A mild solution of vinegar and water works well to remove hard water spots and stains from the sink or shower fixtures.

## Sanitizing the Plumbing System

**When to sanitize:**

- □ When your RV is new.
- □ At the beginning and end of each season.
- □ When the water system becomes contaminated or every three months of use.

**Sanitizing Instructions:**

1. Turn water heater power OFF. (both switches: Electric & LP gas) Set the valves to **SANITIZE** as indicated on the Utility Center label. (Setting these valves bypasses the water heater automatically.)

**Refer to** *Uni-Dock Utility Center* **for setting details and color key**

2. Level the recreation vehicle and drain the fresh water system. (see *Draining the Fresh Water System).*
3. Close the low point drain valves and the fresh water tank drain valve.

   **Full System Canister water filter (if so equipped):** Remove the canister; take the filter out of the canister, then reattach the empty canister.

   **Bypass the cartridge water filter (if equipped).** Use the clear plastic tube (supplied with RV) to bypass the water filter.
4. Prepare a chlorine solution using 1/4 cup of household bleach (sodium hypochlorite solution) to one gallon (3.785 liters) of water in a container. Prepare one gallon of solution for every 15 gallons of tank capacity. This will result in a residual chlorine concentration of 50 ppm in the water system.

   If a 100-ppm concentration is required as discussed in step 12, use ½ cup of household bleach with one gallon of water to prepare the chlorine solution. One gallon of the solution should be used for each 15 gallons of tank capacity.

**NOTE:** Fresh water tank sizes vary by model, please contact your dealer or Customer Service for your specific tank size..

5. Put the sanitizer solution in the fresh water tank:

   Attach a hose to the City Water Connection inlet. Insert the other end of the hose into a container holding the chlorine solution. **Do not use your non-toxic drinking water hose.** Turn the pump switch ON. Solution will be drawn into the fresh water tank. Turn pump OFF when solution has been drawn into the tank. (NOTE: to aid in siphoning, set the container on a surface approximately 2 feet off the ground) Drain valves must be turned OFF.

6. Remove the chlorine container and finish filling the fresh water tank with clean (potable) water until tank is full:

   Keep the valves set on **SANITIZE.** Leave the hose attached to the City Water Connection inlet, place other end of hose in a container of fresh water. Turn pump ON. Fresh water will be siphoned into the tank. Turn pump OFF when tank is full. Disconnect the hose from Utility Center.

7. After the recommended amount of sanitizing solution is in the tank, the water tank is full, and cartridge water filter (if so equipped) bypassed or the filter is removed from the full system canister water filter (if so equipped). Power to water heater should be OFF. (both switches: Electric & LP GAS) When the fresh water tank is full:

   Set valves to the **DRY CAMPING** setting. Turn the pump ON and sanitized water will flow into the water lines from the tank.

8. Open all hot water faucets one by one until water begins to flow continuously and a chlorine smell is noticeable. Include outside shower faucets (if so equipped). Close hot water faucets.
9. Open all cold water faucets one by one until water begins to flow continuously and you smell chlorine. Include outside shower faucets (if so equipped). Close cold water faucets.
10. Turn OFF the water pump.
11. Let the solution remain in the tank & lines for at least four hours when disinfecting with 50-PPM residual chlorine. If a shorter time period is desired, then a 100-PPM chlorine concentration should be permitted to sit in the system for at least one hour.

> **NOTE:** To thoroughly sanitize the fresh water tank, the unit should be driven around for a period of time allowing the solution to splash the sides and top of the tank

12. After the required period, drain the chlorine solution from the fresh water system (see *Draining the Fresh Water System).*

**Rinse the system with fresh water:**

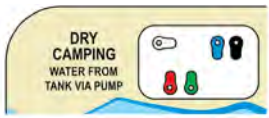
13. Fill the fresh water tank full of clean (potable) water. (Select from 1 of 2 methods below)

    1. *Filling from a pressurized source:* Set the valves to the **POWER FILL TANK** setting. Connect a non-toxic drinking hose to the City Water Connection inlet. Connect the other end of the hose to the pressurized water source. Turn on the water source. When tank is full, turn off the water source, disconnect the hose from the water source first, then disconnect from the Utility Panel.

    2. *Syphon filling from a water container:* Set the valves to the **SANITIZE** setting. Insert a hose into the City Water Connection inlet, place other end of the hose in a container of water. Turn pump ON to draw water into the tank. After the tank is full, turn the pump OFF. Remove the hose and the container. (NOTE: to aid in siphoning place the container on a surface approximately 2 feet off the ground.) Drain valves must be off.

14. Power to water heater should be OFF. (both switches: Electric & LP GAS) When the fresh water tank is full:

    Set the valves to the DRY CAMPING setting. Turn the pump ON to send water through the lines.




15. Run water through all faucets (hot & cold, including outside shower) until chlorine smell is gone. Turn faucets and outside shower off, turn pump OFF.

16. Then, drain the fresh water system again. (see **Draining the Fresh Water System**).

    If the RV has the Full System Canister water filter, remove the canister, reinstall the filter, and reattach the canister.

17. Refill the fresh water tank with fresh water again and when water heater is full of water, turn the water heater power ON. Refer back to Step 13 above for instructions on refilling the fresh water tank.

**Lingering Chlorine Taste:**

If a chlorine taste lingers in the water, flush the water system with a solution consisting of one-quart vinegar to five gallons of clean water. Re-flush as necessary. This vinegar solution may damage the water heater or the water filter, so both must be bypassed again before performing this operation.

Follow the steps outlined in *Draining the Fresh Water System* with one exception, do not drain the water heater. Do not remove the water heater drain plug.

For the **Full System Canister** water filter: Remove the canister, take out the filter, then re-attach the empty canister.

**After draining the system:**

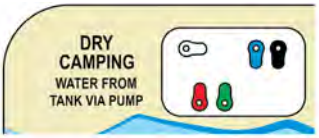
1. Water heater power should still be OFF. (both switches: Electric & LP Gas)
2. Put the vinegar solution into the fresh water tank:

   Set the valves to the **SANITIZE** setting. Attach a hose to the City Water Fill inlet. Put the other end of the hose in a container with the vinegar solution. Turn the pump ON. Solution will be drawn into the fresh water tank. (Water heater will be bypassed automatically). When container is empty, turn pump OFF, and disconnect hose from Utility panel. (To aid in siphoning place the container approximately 2 feet off the ground) Drain valves must be closed.

3. Fill the fresh water tank full of clean (potable) water. (select 1 of the 2 methods below)
   1. *Filling from a pressurized source;* Set the valves to the **POWER FILL TANK** setting. Connect a non-toxic drinking hose to the City Water Fill inlet. Connect the other end of the hose to the pressurized water source. Turn on the water source. When tank is full, turn off the water source, **disconnect the hose from the water source first,** then disconnect from the Utility Panel.

   2. *Syphon filling from a water container;* set the valves to the **SANITIZE** setting. Insert a hose into the City Water Fill inlet, place other end of the hose in a container of water. Turn pump ON to draw water into the tank. After the tank is full, turn the pump OFF. Remove the hose and the container. (To aid in siphoning place the container approximately 2 feet off the ground) Drain valves must be closed.
4. Run water through all faucets (hot & cold, including outside shower) until chlorine smell is gone.

   Set the valves to the **DRY CAMPING** setting. Turn the pump ON to send water through the lines.




5. Close all faucets including outside shower. Turn pump OFF.
6. Drain the system again, but don't drain the water heater. Do not remove water heater drain plug (if so equipped).
7. Close low point drains and fresh water tank drain.

8. Refill the fresh water tank with clean potable water. Use the City Water Fill Connection Inlet, and one of the two methods explained in Step 3 above.
9. Open faucets and check that the chlorine taste is gone.
10. Drain the system one more time (See *Draining Fresh Water System*)
11. Remove the clear tube and replace the cartridge filter (if so equipped). Or remove Full System Canister, insert filter, and reattach canister to the mount.
12. Refill the fresh water system with clean water.
13. After filling the water tank, set the valves to either DRY CAMPING or CITY WATER in order for water to flow through the water heater again.

## Winterizing The Plumbing System

**⚠ WARNING**

Automotive antifreeze (ethylene glycol) and windshield washer antifreeze (methanol) are poisonous. Never use these products in your fresh water system. These products are harmful and may be fatal if swallowed.

Preparing your RV for colder weather or storage is very important for most states and Canada. Failure to prepare your RV may cause water supply lines or the water heater to freeze. Refer to the Uni-Dock Utility System section for setting details.

Use **ONLY RV ANTIFREEZE** in your fresh water system for freeze protection. No other product or commodity should be used.

The RV should be winterized at the end of the camping season or when the RV will be exposed to temperatures that will fall at or below 32°F (0°C). Repairs due to freezing are not covered under the terms of the Towable Limited Warranty.

**NOTE:** The water heater must be drained to prevent damage from freezing. It is recommended the water heater be drained and bypassed during the winterization process particularly if introducing RV antifreeze into the plumbing system. Antifreeze should be kept out of the water heater.

There are two methods of winterizing your recreation vehicle based upon your model. Please read, and understand the following instructions before beginning.

**Air Pressure Method:**
This method will utilize an air hose to blow excess water from the water lines. If temperatures will fall below 32°F (0°C) the air pressure method alone is not adequate to protect the water lines from freezing. Antifreeze must be used if temperatures will fall below 32°F (0°C).

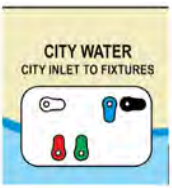
**NOTE:** Recommended pressure is 40 PSI maximum. Exceeding this pressure may rupture water line couplings and void your warranty.

1. Make sure all holding tanks are empty and all drain valves are OPEN.
2. Run the water pump until it is dry, this will take approximately 15-20 seconds.
3. OPEN all faucets and drains, including outside shower faucets (if so equipped) and hold the flush lever open on the toilet.

   *Residential Refrigerator (if so equipped):* Remove the refrigerator water filter (if so equipped), discard it. Install a new filter the next time you use your recreation vehicle. Place a container under the water dispenser; activate the dispenser until only air comes out. Pull the lever at the ice maker to release the ice bucket. Remove the ice bucket. Locate the black rubber test switch on the side of the ice maker. Press and hold it until only air comes out of the ice maker. Replace the ice bucket. Unplug the refrigerator. Prop open the refrigerator doors to prevent odors from developing.

   *RV style Refrigerator (if so equipped):* Unplug the refrigerator and prop open the doors to prevent odors from developing.

4. Set the valves to the **CITY WATER** setting. Attach a blowout plug to the City Water Fill inlet. Attach air hose to the blow out plug and blow air into the system. Any remaining water should blow out in five to ten minutes. Recommended pressure is 40 PSI maximum.




**NOTE:** CITY WATER setting will only allow air to blow through the water lines. It will not allow air to blow through the fresh water tank, or the water heater.

   *Washing Machine (if so equipped):* Set control to **Quick Wash,** set temperature to **WARM**. Press **START** to turn washer on. You should hear air coming into the washer. Press **Pause** then **Stop/Cancel.** Add about a quart of antifreeze into the tub. Set control to Drain/Spin setting and let run for about 1 minute. Antifreeze should go down into the machine pump. Press Stop/Cancel, unplug it and wipe out any excess antifreeze.

5. Pour one cup of non-toxic RV antifreeze into any/all drain P-traps. (bathtub, sinks and toilet).

**Winterizing with antifreeze Method:**
It may be easier to winterize the RV with another person to assist you.

Antifreeze should **never** enter the water heater, RV water filter, refrigerator water filter, or fresh water tank.

1. Turn water heater power OFF. (both switches: Electric & LP Gas) Water heater should never be drained when HOT or under pressure.
2. Level the RV and drain the fresh water plumbing system. (See *Draining the Fresh Water System)*
3. Replace the water filter cartridge with the plastic bypass hose (if so equipped). On full system canister water filters (if so equipped), remove the canister, take out the filter, and reattach the empty canister.
4. Water heater should be empty after performing Step 2.
5. Make sure the "fresh water tank drain" and "low point drains" are closed.
6. Set the water valves to **WINTERIZE** setting, connect a hose to the City Water Fill inlet. Insert the other end of the hose in a container of antifreeze. Turn the pump ON. Antifreeze will be drawn into the water lines and fixtures (pump only runs when a faucet or fixture is open).

**NOTE:** When set to WINTERIZE: antifreeze will not enter the water heater or the fresh water tank. There are no dedicated water heater bypass valves.

7. Turn the water pump ON. Antifreeze will be drawn into the water lines.
8. Open the hot water line faucets (kitchen/bath sinks, shower and outside shower (if so equipped)) until RV antifreeze begins to flow continuously.
9. Close the hot water line faucets and repeat with the cold water line faucets.

**NOTE:** Refer to the Winterizing appliances with antifreeze – no kitchen island OR Winterizing appliances with antifreeze – with a kitchen island sections before you finish the winterizing process.

**When you are finished adding RV antifreeze:**
1. Turn the water pump OFF. Remove hose & container from the City Water Fill inlet. Put the cap back on the City Water Fill inlet. Leave the valves in **WINTERIZE** position.

2. Pour 1 cup of RV antifreeze into any/all drain P traps. (sinks, & bathtub)
3. To prevent staining, wipe the RV antifreeze out of the sinks, shower (or tub), toilet, washing machine tub, & dishwasher tub using a soft, dry cloth.

   If needed, contact your RV dealer for assistance.

**Winterizing appliances with antifreeze – no kitchen island**

□ **Residential Refrigerator:** Antifreeze should be used if temperatures will fall below 32°F (0°C). Remove the refrigerator water filter and discard. Replace with a new one in the spring. Place a container under the water dispenser. Operate the water dispenser until antifreeze comes out. Pull the lever at the ice maker to release the ice bucket. Remove the ice bucket. Locate the rubber test switch on the side of the ice maker, press and hold it until antifreeze comes out. Replace the ice bucket. Unplug the refrigerator, prop open the doors to prevent odors.

**De-Winterizing Refrigerator:** Flush the antifreeze from all the RV water lines first. Place a container under the water dispenser. Operate the water dispenser until clear water comes out. Remove the ice bucket, press and hold the rubber test switch until clear water comes out. Replace the ice bucket. Replace the refrigerator water filter. *Toilet:* Flush the toilet several times until you see antifreeze in the bowl.

□ **Washing Machine (If So Equipped):** Set the water temperature to **WARM**, press **START**. This will bring antifreeze in through the hot and cold water lines. **Run the washer just long enough to bring about a quart of antifreeze into the drum.** Press the **Pause button**. Select the Rinse/Spin cycle and let it run for about 1 minute. This will drain antifreeze down into the pump. Press Pause, then Stop/Cancel and unplug it. Wipe out any excess antifreeze in the drum.

**De-winterizing the Washing Machine**: Run a full empty wash cycle before camping season begins.

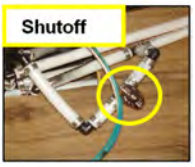
□ **Dishwasher (If So Equipped):** Put the dishwasher on the rinse cycle for a minute or so and it will put antifreeze into the pump.

**De-winterizing the Dishwasher:** Run an empty wash cycle before camping season begins.

**NOTE:** Return to the When you are finished adding RV antifreeze section to complete the winterization process.

**Winterizing appliances with antifreeze – with a kitchen island**

If your model is equipped with a kitchen island, there will be a shut-off valve located in the island. Typically the valve is located behind a removable panel in the cabinetry.



**Winterizing the residential refrigerator**

**NOTE:** In addition there is a low point drain for the refrigerator water line located under the slide.

1. Remove the filter from inside the refrigerator and discard it. Replace it at the beginning of next camping season.
2. The water supply shutoff valve for the refrigerator should be OPEN.
3. The low point drain for the refrigerator supply should be closed.
4. The clear tubing at the water pump should be inserted into a container of RV antifreeze. The siphon valve (attached to the clear tubing) should be turned so it is pointing away from the clear tubing. To aid siphoning, the container of antifreeze should be placed on a flat surface approximately 2 feet off the ground.
5. Turn the water pump ON.
6. Hold a container at the refrigerator water dispenser. Operate the paddle on the refrigerator water dispenser until antifreeze runs out of the water dispenser.
7. The reservoir inside the refrigerator must fill with antifreeze; it may take 3 large cups full before antifreeze will appear at the dispenser. Remove the container.
8. Turn the lever on the side of the ice maker to remove the ice bucket.
9. Remove the ice bucket, and hold the test switch on the ice maker until antifreeze enters the ice maker. Release the test switch. Replace the ice bucket.
10. Turn on the drinking water faucet (if so equipped) at the kitchen sink, until antifreeze runs out. Turn the faucet OFF.
11. When antifreeze is in the refrigerator water line and ice maker, CLOSE the water supply shutoff valve. This will keep the antifreeze in the refrigerator water line. Turn the water pump OFF.

**De-Winterize the Residential Refrigerator**

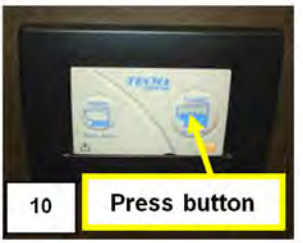
1. Open the refrigerator water supply shutoff valve. Open the refrigerator supply line low point drain valve under the slide out. This will drain some of the antifreeze out of the line but it will still need to be flushed.
2. Close the low point drain valve.
3. With the fresh water tank full, all faucets OFF, turn the water pump ON.
4. Hold a container at the water dispenser on the refrigerator. Operate the dispenser and run water through it until only clear water comes out. The reservoir inside the refrigerator must fill with water, so it could take up to 3 large cups full of water to run clear.
5. Press the lever on the ice maker to release the ice bucket.
6. Remove ice bucket and press and hold the test button on the ice maker until clear water comes through the icemaker. Run a batch or two of ice cubes until the ice is clear. Replace the ice bucket.
7. Open the drinking water faucet at the kitchen sink and operate it until the water runs

clear. Replace the filter inside the refrigerator. Turn the pump OFF.

**Winterizing the Washing Machine (if so equipped)**
With the clear tube still in the container of antifreeze at the utility center and pump ON:

1. Set the washing machine selector to **Quick Wash,** set the temperature to **WARM,** and press **START**. The washer should begin trying to fill washer with water.
2. RV antifreeze will begin to run into the drum. Press the **Cancel/Drain** button **one** time to stop the washer. Open the drawer (Fig. 9) there should be antifreeze in it.
3. Now pour several cups of RV antifreeze into the drum.
4. Press and hold the **Cancel/Drain** button until the washer begins a drain cycle. It will drain the antifreeze out of the drum and into the drain pump.

When antifreeze leaves the drum, press the **Cancel/Drain** button one time to stop it. Set machine selector knob to OFF.




**De-Winterize Washer:** Run an empty wash cycle.

**Winterizing the Dishwasher (if so equipped)**
With the clear tube still in the container of antifreeze at the utility center and pump ON:

1. Use the dishwasher remote control to unlock the dishwasher. Open the dishwasher and select **Rinse.**
2. Close the dishwasher and the rinse cycle should begin. This will bring some antifreeze through the lines, and into the dishwasher.
3. Pause the dishwasher with the remote (wait for 3 beeps), open the dishwasher and add several cups of antifreeze into the tub.
4. Close the dishwasher, re-start it with the remote, then press and hold the button on the remote until you hear a quick double beep, and the dishwasher will drain the antifreeze into the pump assembly.

**De-Winterize Dishwasher:** Run and empty wash cycle

**Winterizing the Macerator Toilet (if so equipped):**
With the clear tube still in the container of antifreeze at the utility center and pump ON:

1. Press the **Normal Flush** button (the large button) one time (Fig. 10). This will bring antifreeze through the water line, and into the bowl of the toilet.
2. Add a couple cups of antifreeze into the toilet bowl.
3. Press both buttons simultaneously and release. This empties the bowl, and leaves the drain valve open.

De-Winterize Macerator Toilet: Press either button to flush and return to normal condition.

**NOTE:** Return to the When you are finished adding RV antifreeze section to complete the winterization process.

## Black/Grey Water System

Water from the sinks and shower flows into the gray water (or waste water) holding tank. Water from the toilet will flow into the sewage (or black water) holding tank.

**⚠ WARNING**

Never travel with full black or grey water holding tanks. This not only wastes your fuel but depending on the location of the tank(s), it can affect your tow vehicle handling characteristics.

The weight of the holding tank contents is not calculated into the RV cargo carrying capacity (this extra weight would reduce your available cargo capacity). Traveling with full holding tank(s) could possibly cause you to exceed the individual tire ratings and/or the RV GAWR or RV GVWR. Potential damage to suspension components, such as springs, tires and axles, could result.

If your RV holding tank(s) are located behind the axles, the weight of the full tank(s) will reduce the hitch weight. Trailer sway and other handling difficulties can be the result of the hitch weight being too light.

Dump the gray and black water holding tanks before traveling to avoid carrying unnecessary weight. If you are dry camping and cannot immediately empty your holding tanks, reduce your vehicle speed until you reach a dumping station.

Before using the RV or after dumping the grey and black water holding tanks, always add the proper amount of deodorant to the black water tank to prevent malodors and help break down holding tank contents (unless winterizing). Follow the deodorant bottle or package instructions. Driving to a disposal site will normally loosen any accumulated waste debris or solids from the sides of the holding tanks.

**⚠ WARNING**

Do not add automotive antifreeze or caustic chemicals such as laundry detergents into the holding tanks. Although these products may have a deodorizing effect, they may damage the plastic and rubber parts of the plumbing system or the components.

**Drain pipes With P-Trap (If So Equipped):**

The drain pipes may be equipped with a “P-trap” installed to help prevent odors from escaping into the RV. During travel, water from the P-traps may spill and permit odors into the RV.

By adding water and using a RV approved deodorizing

agent you will dissolve the contents faster and will keep the drain lines and tanks clean and free flowing. These chemicals are available at an RV supply store or your dealer.

**Drain pipes With Dry Sealing Valve (If So Equipped):**
Your RV may be equipped with a dry sealing valve that prevents the escape of odors from your waste system and eliminates the need for P-traps.

Should the RV drain piping system become clogged and a mechanical cleanout tool is used to open the drain pipe, it is important that the dry valve be removed before passing the cleanout tool through the piping.

Passing a mechanical cleanout tool through the waterless valve may cause damage to the internal seal that may potentially allow sewer gases to escape into the RV interior.

A label has been placed near the location of the waste valve that reads as follows:

| |
|---|
| REMOVE WATERLESS TRAP BEFORE<br>USING MECHANICAL DRAIN – CLEANING DEVICES |

**Vents:**
Another important part of this system is the vent pipes and vents that release air from the grey and black water holding tanks. The exterior vent cap is attached to the roof and must be kept clear of obstructions to perform as intended. On some models, the vent pipe may be part of the drainage system referred to as a "wet vent" (water flows downward as air flows upward in the same pipe).

## Black/Grey Water Holding Tanks

When connected to the sewer drain line at a campground, keep the "black tank drain" valve closed until the holding tank is at least ¾ full. This should provide sufficient water to assist in complete draining of the black water holding tank. Repeat as needed. Never leave the black tank drain in the open position continuously when connected to the campground sewer system.

**⚠ WARNING**

Whenever possible, do not travel with waste in the holding tanks. Liquid or debris in the holding tank(s) may affect the towing characteristics and may result in property damage or personal injury.

## Black & Grey Tank Drains

There are labels on the exterior of the RV indicating the location of the grey tank drain and black tank drain (also called dump valves). Always drain the black water holding tank first so the following grey tank waste water can help rinse any solids or debris from the dump outlet and sewer hose.

1. To make drainage easier, level the RV.
2. Remove the sewer hose housing dust cap, and attach the sewer hose (customer supplied).
3.

**Black/Grey tank drain & valves**

4. Place the end of the sewer hose into the approved dump station.
5. Open the black tank dump valve. (Valve may be located under the RV, or on the Utility Center if so equipped) Close the dump valve when the black water holding tank is emptied.
6. Open the grey tank dump valve. (Valve may be located under the RV, or on the Utility Center if so equipped) Close the dump valve when the grey holding tank is emptied.
7. Remove, clean and store the sewer hose.
8. Close the sewer hose housing dust cap.

You can locate many dump stations throughout the United States and Canada in Woodall's, Rand McNally Camp Guide, Good Sam Camp Guide, KOA Kampgrounds Camp Guide and various other publications. Some fuel stations also have dump stations.

Please contact your RV dealer for assistance in the purchase and installation of a sewer hose or sewer hose extension (if needed).

**Sewage (black) tank preparation:**

**⚠ WARNING**

It is important to add enough water to prevent solid waste buildup. Follow the directions listed below and in the manufacturer's operator manual.

1. Release one to two quarts (1 or 2 liters) of water into the toilet bowl.
2. Follow the directions on your (RV approved) toilet chemical bottle (customer supplied), by placing the recommended quantity of holding tank chemical into the toilet bowl.
3. Flush the toilet and allow at least two gallons (8 liters) of water to flow into the holding tank.

**Waste (grey) holding tank preparation:**
No special preparation is required, however, placing a small quantity of chemicals into this tank, such as baking soda or an approved RV chemical, will reduce odors from food particles in the system.

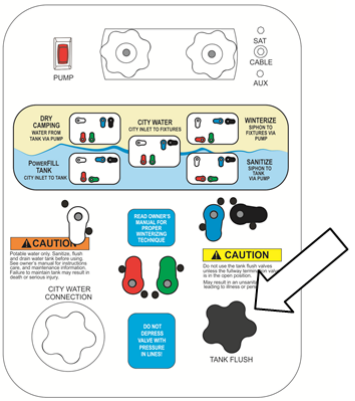
**Cleaning & Maintenance:**
The toilet should be cleaned regularly for maximum sanitation and operational efficiency. Use only RV approved chemicals. Do not use chlorine (undiluted) or caustic chemicals, such as laundry bleach or drain opening types, in the toilet system. These products damage the seals in toilets and dump valves.

## *Black Tank Flush (Rinsing the Waste Tank)*

The Tank Flush Inlet (also known as the **No Fuss Flush**), is the black inlet located on the Utility Center Panel. This inlet is provided to assist in flushing out the black water tank. **The dump valve for the black water tank must be OPEN to use this feature.**

When a water hose is connected, and when the water source is turned on, it sprays water into the black water tank, which aids in moving out the waste and cleaning the interior of the tank.

**NOTE:** The colored valve positions do not affect the Tank Flush function. It does not matter where they are positioned when operating the Tank Flush. Refer to the Uni-Dock Utility Center




Sewer Tank Flush Inlet on Utility Center

**Sewer Tank Flush Inlet procedure:**

1. Connect the flexible sewer hose to the 4 inch dump outlet under the recreation vehicle.
2. Open the black water dump valve on the utility center and leave it open. Allow the tank to drain.
3. Attach a water hose to the tank flush inlet. Do not use your fresh water hose for this.
4. Attach the other end of the hose to a pressurized water source (40 PSI minimum).
5. Turn the pressurized water source ON. Flush the tank until water appears clear in the 4 inch sewer hose. (Dump valve must remain open)
6. Turn the water source OFF. Disconnect the hose from the water source.
7. Disconnect the hose from the tank flush inlet on the utility center.
8. Disconnect the sewer hose, and close the dump valve.

**NOTE:** To keep debris from clogging the tank sprayer orifices, use the tank flush every time the waste tank is emptied..

## Toilet

The toilet is efficient and easy to operate. Generally, more water is required only when flushing solids. Prior to using the sanitation system, it is strongly recommended to flush the toilet several times to release sufficient water into the holding tank. If there is not a sufficient amount of water used during flushing, the waste materials may not evacuate properly from the drain line to the tank. Clogged tanks and pipes could eventually occur.

The toilet system will perform better when water is run for ten to fifteen seconds after flushing to ensure that the waste will proceed to the bottom of the tank.

Unlike a toilet in a home, which may use up to seven gallons of water per flush, the average recreation vehicle system uses one to three quarts (1 - 3 liters).

For added convenience and better sanitation system performance, it is advisable to always have four to six inches (10 - 15 cm) of water in the toilet.

**⚠ WARNING**

It is important to prevent solid waste buildup. Follow the toilet manufacturer's recommended instructions each time after emptying the black water holding tank.

**⚠ CAUTION**

It is important to add enough water to prevent solid waste buildup. Follow the directions listed below and in the manufacturer's operator manual.

**⚠ CAUTION**

It is important to add enough water to prevent solid waste buildup. Follow the directions listed below and in the manufacturer's operator manual.

**Sewege (black) tank preparation**

1. Release one to two quarts (1 or 2 liters) of water into the toilet bowl.
2. Follow the directions on your (approved RV) toilet chemical bottle (customer supplied), by placing the recommended quantity of holding tank chemical into the toilet bowl.
3. Flush the toilet and allow at least two gallons (8 liters) of water to flow into the holding tank.

**Waste (grey) holding tank preparation**

No special preparation is required; however, placing a small quantity of chemicals into this tank (such as baking soda or an approved RV chemical) will reduce odors from food particles in the system.

**Cleaning & Maintenance**

The toilet should be cleaned regularly for maximum sanitation and operational efficiency.

**⚠ CAUTION**

Do not use chlorine (undiluted) or caustic chemicals, such as laundry bleach or drain opening types, in the toilet system. These products damage the seals in toilets and dump valves.

**For more information**

Refer to the manufacturer's operator manual. If you have further questions consult your RV dealer, the manufacturer or Customer Service.

## Air Conditioner

**Roof Mount (If So Equipped)**

The roof mounted air conditioning system is controlled by a thermostat. Cooled air enters the RV through the adjustable "chill grill." Make sure you have sufficient power available before operating the air conditioner. Do not operate the air conditioner without the return air filter. Operating the system without the filter allows the lint and dirt that is normally stopped by the filter to accumulate on the cooling coil of the air conditioner. This also will lead to a loss of air volume, possible equipment damage and an expensive cleaning process.

A special foam gasket is placed between the roof material and the subframe of the air conditioner to guard against water leakage. The air conditioner is subjected to wind pressures along with motor vibration during normal operation.

Inspect the mounting bolts for tightness to ensure there is no leakage or looseness at least annually. Re-tighten bolts when they are loose.

DO NOT over tighten these bolts as it may damage this gasket. The air conditioner gasket is a wearable part that eventually will need to be replaced. To gain access to the bolts, remove the filtered panel cover on central air systems or the entire air box on non-central air conditioners. Consult the manufacturer's operators manual or your RV dealer for more information.

For additional information refer to the manufacturer's owner's manual included in your warranty packet.

**Wall Mount (If So Equipped)**

The wall mounted air conditioning system is controlled by a thermostat. Cooled air enters the RV through the grill. Make sure you have sufficient power available before operating the air conditioner. Do not operate the air conditioner without the return air filter. Operating the system without the filter allows the lint and dirt that is normally stopped by the filter to accumulate on the cooling coil of the air conditioner. This will lead to a loss of air volume, along with possible machine failure. Keep the air inlet grill and cabinet clean by wiping with a cloth dampened with warm water and a mild detergent.

**For additional information** refer to the manufacturer's owner's manual included in your warranty packet.

## Attic Fan (If So Equipped)

**Attic Fan Control**

The 12-volt DC attic fan (or powered roof vent) allows fresh air to circulate through the recreation vehicle. Do not leave the attic fan open when the recreation vehicle is stored or unattended for long periods. High winds, other unusual conditions or obstructions may prevent the dome from closing; the resulting leakage could cause non-warrantable damage.

The attic fan is controlled with a control pad. The dome can be raised or lowered with the UP/DOWN buttons, and the speed of the fan is controlled by the ARROW buttons. It is also equipped with a rain sensor that will close the vent automatically when it rains. The rain sensor can be turned on/off by holding the DOWN button for 3 seconds.

**For additional information** refer to the manufacturer's owner's manual included in your warranty packet.

## Ceiling Fan (If So Equipped)

**⚠ WARNING**

Be careful to avoid placing any object in the path of the ceiling fan blades!

Ceiling fans are both functional and decorative. Turn the ceiling fan ON/OFF using an interior wall switch. The 3-speed ceiling fan is controlled by the pull chain switch. The sequence of operation for the pull chain switch is: OFF, High, Medium, Low, OFF. The slide switch (located on the fan) controls the direction of operation (down for forward, up for reverse). Stop the fan first before reversing the operation direction!

**NOTE:** During cooler temperatures, set your fan settings to "low," and set the fan to turn clockwise to pull warm air from the ceiling back towards the floor. In the summer, the fan should turn counter-clockwise to keep air moving.

**For additional information** refer to the manufacturer's owner's manual.

## Ducting & Return Air

All heat discharges, registers and return air grills must be free and clear of obstructions. This includes all closeable registers that are intended to reduce airflow, do not shut it off completely.

## Thermostat

There may be up to two 12-volt DC thermostats in your motor home. Use the controls to set the temperature to your comfort setting.

## Furnace

The furnace installed in your motor home is controlled by a thermostat. The furnace requires both 12-volt power and propane gas for full operation. Make sure you have sufficient power available before operating your furnace.

If you have any questions contact your dealer or Customer Service.

A qualified RV technician should perform all furnace maintenance at least once a year (more often depending on furnace usage). Never attempt to repair the furnace yourself.

**⚠ WARNING**

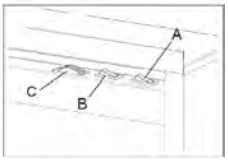
The furnace should be inspected periodically (monthly during the heating season) for presence of soot on the vent. Soot is formed whenever combustion is incomplete. This is a visual warning that the furnace is operating in an unsafe manner. If soot is observed on the vent, immediately shut the furnace OFF and contact a qualified service agency. Operating the furnace under this condition could lead to serious property damage, personal injury or loss of life.

## ⚠ WARNING

To ensure your personal safety, do not obstruct or alter the furnace in any manner. Do not install screens over the vent for any reason. Screens will become restricted and cause unsafe furnace operation. For your safety, only the manufacturer's factory authorized parts should be used on your furnace.

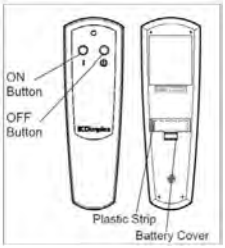
## Fireplace (If So Equipped)

The controls are located on the upper right of the fireplace.



**Controls**

- □ **(Switch "A":** This is a 3 position rocker switch.
- □ Center Position is OFF
- □ Position "I" is for Manual Operation. If selected, the built-in remote control is bypassed.
- □ Position "II" is for operating the unit with the provided remote control. When in the "II" position, the unit is operated with the ON/OFF buttons on the remote control. (See Remote Operation section)



**Remote**

**Switch "B" Heater ON/OFF:**
The Heater ON/OFF switch supplies power to the heater fan and the heater element. When the switch is ON, the heater will operate if the thermostat calls for heat.

**NOTE:** The fan will continue running even when the heater is not, when the Heater Switch is in the ON position.

**NOTE:** The heater may emit a slight, harmless odor when first used. This odor is a normal condition caused by the initial heating of internal heater parts will not occur again.

**Switch "C" Heater Thermostat Control:**
To adjust the temperature to your individual requirements, turn the thermostat control

clockwise all the way to turn on the heater. When the room reaches the desired temperature, turn the thermostat knob counter-clockwise until you hear a “click”. Leave in this position to maintain the room temperature at this setting. For additional heat, turn clockwise until you hear the “click” again and the heater will turn on.

**Resetting the Temperature Cutoff Switch:**

Should the heater overheat, an automatic cut out will turn the heater off and it will not come back on without being reset. It can be reset by switching the 3 Position Switch “A” to OFF (center position) and waiting 5 minutes before switching the unit back on again.

**⚠ CAUTION**

If you need to continuously reset the heater, unplug the unit and call technical support at 1-888-346-7539.

**Remote Operation:**

The fireplace is supplied with an integrated ON/OFF remote control. The 3 Position Switch “A” must be set to the remote control setting “II”. To operate, push the ON button on the remote, to turn on the fireplace. Press the OFF button on the remote to turn off the fireplace.

**NOTE:** Before attempting any operation with the remote control, pull the plastic insulator strip out from between the remote control casing and the battery cover. .

**Remote Control Initialization/Reprogram:**

In the event that your remote control ceases to operate the fireplace, follow these steps to reinitialize the remote control and the remote control receiver in the fireplace:

1. Place the 3 Position Switch “A” in the center (OFF) position. Wait a minimum of 5 seconds and then place Switch “A” in the “II” position (for Remote Control).
2. Within 10 seconds of changing the switch position, press the ON button located on the remote control. This will synchronize the remote control with the fireplace receiver.

**NOTE:** You only have 10 seconds to perform Step 3. Failure to do so results in having to perform Steps 1 to 3 a second time..

**Battery Replacement:**

1. Slide the battery cover open on the remote control. (Correctly install one 12 volt A23 type battery in the battery holder.
2. Close the battery cover.

Battery must be recycled or disposed of properly. Check with your local Authority or Retailer for recycling advice in your area.

Refer to the manufacturer's user guide included in your Owner's Portfolio for more detailed operating and safety instructions.

Notes:

## Microwave (If So Equipped)

Make sure there is sufficient 120-volt power available before operating the microwave. Make sure the microwave turntable (if so equipped) is secured prior to traveling. Do not operate the microwave when it is empty.

**⚠ WARNING**

Never use the microwave cavity for storage. The microwave cavity should always be empty when not in use.

## Drop In Cooktop (If So Equipped)

Drop in cooktops add compact high efficiency cooking performance to your recreation vehicle. Depending on your model, it may be equipped with either a 2 burner or 3 burner cooktop.

The 2 burner match-light cooktop has two 6500 BTU/H burners with control panel. The 3 burner piezo-igniter cooktop has one front 9000 BTU/H burner and two rear 5200 BTU/H burners. The 3 burner cooktop is also equipped with a control panel.

For detailed operating and cleaning information, refer to manufacturer's owner's manual.

## Kitchen Stove, Range or Oven (If So Equipped)

To prevent damage, always use the manufacturer's recommended size flat bottom pan(s). Generally, the pan should be large enough to cover the burner, but not be more than one inch larger than the burner grate.

Do not use a broiler pan, griddle or any other large utensil that covers more than one burner at a time. This will create excessive heat that may cause melting, sooting or discoloration.

In addition, the use of undersized pans could expose a portion of the heating element to direct contact and may result in ignition of clothing.

Proper relationship of pans to burner will improve efficiency.

**⚠ WARNING**

During and after use, do not touch or let clothing or other flammable material come in contact with the top burners (or heating elements), burner grates or other areas near the top burners or oven until they have had sufficient time to cool. These areas can get hot enough to cause burns.

Never leave cooking food unattended. Turn the pan handles inward, but not over the tops of the other range burners. Ensure that pans used are large enough to contain the food and avoid boil-overs. Heavy splattering or spills left on the cook top can ignite and cause burns.

If using glass, glass/ceramic, ceramic, earthenware or other glazed utensils (or cookware) verify it is safe for use on the top burners. Only certain types of utensils (or cookware) are suitable for surface or top burner use.

**Oven (If So Equipped**

**⚠ WARNING**

Do not cover the oven vent openings while the oven is in operation. Restricting the flow of combustion air will create an asphyxiation hazard.

The propane gas oven must have 12-volt power to operate. If you have any questions contact your dealer or our customer service department. Do not use the oven as a storage area.

**For additional information** refer to the manufacturer's owners' manual included in the warranty packet.

## BBQ Grill (If So Equipped)

**⚠ WARNING**

Make sure that you read, understand and follow all information supplied with your RV about propane before operating the BBQ grill. The propane hose must be correctly connected before lighting the grill. Failure to follow instructions supplied by the grill manufacturer with your RV or to use any other components than those originally supplied with the grill could lead to death or serious injury from fire or explosion.

**⚠ WARNING**

The maximum weight limit for the bracket on the side of your motor home is 50 lbs. This limit includes the weight placed on the BBQ gill. Exceeding this weight limit could cause damage to the unit and possibly cause personal injury from hot equipment.

The BBQ grill is for use outside of the motor home. Never use this grill inside a compartment or the motor home. Before operating the BBQ grill, make sure that it is securely placed on the support bracket. The grill must be COMPLETELY cooled before storing to avoid damaging the carrying case (if so equipped) and causing injury from handling the grill when it is hot. Wait until the grill is completely cooled, then store it.

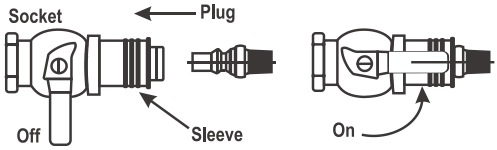
**Bumper mount grill set-up (if so equipped)**

Insert the grill mounting bar into the bracket (mounting tube) on the rear bumper of the recreation vehicle. Insert the pin through the hole in the bracket and mounting bar. The pin must be installed to insure the mounting bar is secure during use. Set the BBQ grill on the mounting bar by inserting the (2) pegs on the bar into the grill mounting bracket. Make sure the mounting bar and the grill are securely in place before proceeding with the propane connection.

**Attaching the "quick coupler" connection**

The "quick coupler" is directly connected to the RV propane system. The "quick-coupler" connection has a positive shut-off valve as required by code and standards.

1. Place the “quick coupler handle in the OFF position and push back the sleeve. The valve handle must be OFF to make the connection.
2. Insert the plug and release the sleeve.
3. Push the plug until the sleeve snaps forward, locking the plug into the socket.
4. Turn the handle ON to allow propane to flow to the drop in stove.




**Quick connect coupler**

**BBQ Grill Prep (if so equipped)**

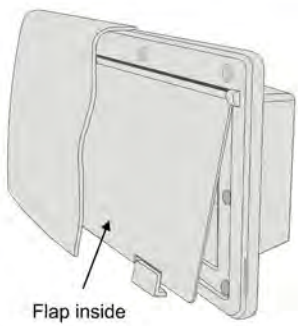
Your recreation vehicle is equipped with a propane “quick-coupler” connection and support bracket for easy installation of the BBQ grill.

## Range Hood (If So Equipped)

If your recreation vehicle is equipped with a range hood, it will be connected to an exterior vent.

The vent has an inner flap with two snaps. This flap can be snapped shut when the vehicle is in motion, or during storage to keep insects, debris, snow, rain, etc. from entering the recreation vehicle.

Anytime the stove inside the recreation vehicle is being used, this flap ***must*** be unsnapped and the range hood turned ON to vent fumes outside the vehicle.




**Range Hood Vent**

**⚠ WARNING**

Whenever the stove in the RV is being used: The range hood ***must*** be turned on, and the inner flap ***must*** be unsnapped and free to move. Failure to do so can create an asphyxiation hazard by restricting air flow to this vent.

## Cooking With Propane

See the Propane System Section for important safety instructions. Refer to the manufacturer’s owners manual for detailed operating and safety instructions for all propane appliances.

## In Case Of A Grease Fire

**⚠ WARNING**

Do not attempt to use water to put out the fire. Water can spread some types of fire, and electrocution is possible with an electrical fire.

Grease is flammable. Never allow grease to collect around top burners or on the cook top surface. Wipe up spills immediately. Refer to Section 2 – Safety Precautions, for fire safety and fire extinguisher information.

## Refrigerator

The refrigerator is not intended for quick freezing or cooling. We recommend stocking it with pre-frozen or pre-cooled food when possible. The shelves should not be covered with paper or plastic and the food items should be arranged so air can circulate freely. Keep the area at the back of the refrigerator clean and free of debris. Check for obstructions in the exterior refrigerator vent area (i.e., spider webs, bird nests, etc.). Use a soft cloth to dust off the debris.

For optimum efficiency and performance, it is recommended the refrigerator be checked at least twice a year as part of the routine maintenance.

**Gas/electric models (If So Equipped)**

**⚠ WARNING**

If you smell propane gas **STOP!** Follow the directions located in your manufacturer's owner's manual and in this manual.

**Residential models (If So Equipped)**

**NOTE:** If you are using electric to power the refrigerator, make sure you are connected to a 120-volt power source.

**⚠ CAUTION**

The ice maker (if so equipped) should be turned off and the ice tray emptied when power to your recreation vehicle has been shut off. With no power, the ice will melt and water may "pool" in the refrigerator door. When power is restored, the vibration may cause this water to run out of the door and on to the vehicle floor.

For detailed operating and safety information, refer to the manufacturer's user guide included in the Warranty Packet.

## Cleaning Your Refrigerator

The following are general cleaning guidelines. For detailed information on cleaning your specific refrigerator, refer to the manufacturer's user's guide included in the Warranty Packet.

**Cleaning the interior**

1. Unplug refrigerator or disconnect power.
2. Hand wash, rinse, and dry removable parts and interior surfaces thoroughly. Use a clean sponge or soft cloth and a mild detergent in warm water.
3. For the inside of the refrigerator, use a warm water and baking soda solution consisting of approximately 1 tablespoon (15ml) baking soda to 1 quart (1 liter) of water. This solution both cleans and neutralizes odors. Rinse and wipe dry.
4. Leave an open box o baking soda in the refrigerator and freezer compartments to help prevent odors.

**NOTE:** Do not use abrasive or harsh cleaners such as window sprays, scouring cleansers, flammable fluids, cleaning waxes, concentrated detergents, bleaches or cleansers containing petroleum products on plastic parts, interior and door liners or gaskets. Do not use paper towels, scouring pads, or other harsh cleaning tools.

There is no need for routine condenser cleaning in normal operating environments. If the environment is particularly greasy or dusty, or if there is significant pet traffic, the condenser should be cleaned every 2 to 3 months to ensure maximum efficiency.

If you need to clean the condenser:

- □ Remove the base grille.
- □ Use a vacuum cleaner with a soft brush to clean the grille, the open areas behind the grille and the front surface area of the condenser.
- □ Replace the base grille when finished.

**Cleaning the exterior**

Wash painted metal exteriors with a clean sponge or soft cloth and a mild detergent in warm water.

For silver-accented plastic parts, wash with soap or other mild detergents. Wipe clean with a sponge or damp cloth. Do not use scouring pads, powdered cleaners, bleach or cleaners containing bleach as these products can scratch and weaken the paint finish.

## Washer/Dryer Prep (If So Equipped)

If your recreation vehicle was built with this feature, be aware the cabinet space provided is intended for the installation of an aftermarket washer/dryer combo unit (customer supplied) only. Please consult your dealer or the manufacturer for installation assistance.

## Central Vacuum (If So Equipped)

The RV must be hooked up to (and be operating on) 120-volt AC power for the central vacuum system to be operational. The vacuum will automatically begin to operate when the hose wall fitting is inserted into the central vacuum wall port. The vacuum will automatically cease to operate when the hose wall fitting is extracted from the central vacuum wall port.

Change the vacuum filter bags regularly to maintain maximum vacuuming power. The filter is located inside the central vacuum assembly that is in turn located inside the front storage compartment.

**⚠ WARNING**

**DO NOT PICK UP ANYTHING THAT IS BURNING OR SMOKING, SUCH AS CIGARETTES, MATCHES, OR HOT ASHES.** RV damage, personal injury, or death may result from vacuuming up burning or smoking material.

**⚠ WARNING**

**DO NOT PICK UP FLAMMABLE OR COMBUSTIBLE LIQUIDS SUCH AS GASOLINE, OR USE IN AREAS WHERE THEY MAY BE PRESENT.** RV damage, personal injury, or death may result from vacuuming up flammable or combustible material.

## Rechargeable Vacuum (If So Equipped)

The portable vacuum is equipped with a rechargeable battery pack which can be plugged into a 120V AC wall outlet. Refer to manufacturer's operating manual for important safeguards and operating instructions. Read all instructions before operating the vacuum cleaner.

## Water Heater – See plumbing section

## Satellite (if so equipped)

Please refer to the manufacturer's instructions for setup, care and maintenance.

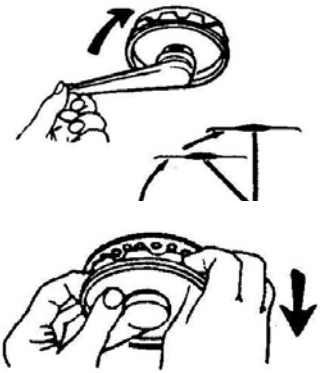
## Television Roof Antenna (if so equipped)

To view local stations at either (or both) the front or bedroom television sets using the television antenna, make sure the TV power supply is ON and the TV roof antenna is raised to the operating position.

The following is an overview of the antenna operation. Refer to the manufacturer's user guide for detailed operating instructions.

**Raising the antenna**

To raise the TV antenna to the operating position turn the antenna elevating crank clockwise in the UP direction (approximately 13 turns) until some resistance to turning is noted.



On amplified models, 12-volt DC power is required. After the antenna is in the full UP position, pull down on the round knob with both hands until it disengages from the ceiling plate. Rotate the knob for best picture.



**To Test**

1. Make sure the television set is working properly.
2. Switch the power supply ON and OFF to see if there is a difference in the picture quality while watching TV. If there is no difference, refer to manufacturer's manual for further testing procedures.

**⚠ CAUTION**

The TV power supply should be turned OFF when connecting/disconnecting the cables to the power supply and antenna, but should be turned ON when testing for voltage.

**Lowering the antenna**

Rotate the antenna until the pointer on the directional handle aligns with the pointer on the ceiling plate. Turn the elevating crank counterclockwise in the DOWN direction until resistance is noted. The antenna is now locked in the travel position.

**⚠ CAUTION**

Make sure the television antenna is in the travel position (cranked down) before moving the recreation vehicle. Failure to lower the antenna into the travel position before traveling may damage the antenna.

**DO'S**

- □ Check parking location for obstructions before raising antenna.
- □ Carefully raise, lower and rotate. If this is difficult, check for cause.
- □ Rotate slowly when selecting station and check fine tuning on TV set to make sure it is properly adjusted.
- □ Lower antenna before moving vehicle.

**DONT'S**

- □ Don't force elevating crank up or down.
- □ Don't rotate directional handle hard against stops.
- □ Don't travel with lift in up position.
- □ Don't leave lift part way up or down.
- □ Don't apply sealing compound or paint over top of base plate or anywhere on lift.

**Lubricating the antenna**

The elevating gear should be lubricated 3-4 times a year with silicone spray.

Two times yearly or in the event rotating the antenna becomes difficult, normal operation can be restored by lubricating the bearing surface between the rotating gear housing and the base plate. Any silicone lubricant spray may be used.

Lubricate rubber quad ring on elevating shaft which is below worm gear with silicone spray lubricant at least twice yearly. This will keep quad ring from becoming brittle which could result in leaks down elevating shaft.

Refer to the manufacturer's user guide for detailed information on lubricating the antenna.

## Television Power Supply (If So Equipped)

For good station reception, the TV power supply must be turned ON to view local television stations. Turning the TV power supply ON sends 12-volt DC through the cable to the TV roof antenna. The voltage energizes the transistors in the antenna head amplifier. The TV signal then comes down the cable to the outlets.

Turn the TV power supply OFF to view cable television or to use a VCR or DVD.

**TV Power Supply**

## Cleaning The Interior

To keep the value of your recreation vehicle, perform regular maintenance using the proper materials and procedures. Using the wrong cleaner may result in damage to the surfaces in your vehicle. Check with the manufacturer's information for the recommended cleaning agent. If in doubt, check to see if the cleaner will cause damage by testing a small area out of sight or contact your dealer for assistance. Do not use flammable liquids or sprays to clean the recreation vehicle.

## Furniture Upholstery

To retain the value of your motor home, maintain the furniture upholstery carefully and keep the interior clean. Vacuum the furniture regularly using a soft brush attachment to remove any loose dirt or debris.

**Fabric (if so equipped)**

It is recommended the fabric be professionally cleaned if it becomes stained or soiled. The

professional cleaner should be made aware the fabrics have been treated to be fire resistant. For more information, refer to the specific furniture manufacturer's care instructions.

**Ultraleather™ (if so equipped)**
It is recommended the Ultraleather™ be professionally cleaned if it becomes stained or soiled. For more information, refer to the specific furniture manufacturer's care instructions.

**Leather (if so equipped)**
Periodic vacuuming, using a dry cloth to wipe up spills immediately, and using a damp cloth on problem areas, will help to keep your leather furniture in good condition. Leather surfaces can vary as do the cleaning methods. Refer to the furniture manufacturer's recommendation, or consult a cleaning professional.

It is recommended you do not use any cleaners containing oils, waxes or silicones. Cleaners containing silicone can eventually destroy the finish on the leather. Cleaners containing oils or waxes should not be used as they leave residues on the surface of the leather which can attract more dirt which can eventually lead to cracking.

## Sofa

**Hide-a-bed Sofa or Sofa Sleeper (If So Equipped)**
The hide-a-bed sofa functions much the same as a regular residential hide-a-bed sofa. To make the hide-a-bed sofa into a bed, remove the seat cushions and pull the sofa back towards you firmly and gently. Activate (or deflate) the air mattress (if so equipped) using the supplied furniture manufacturer's instructions. To convert the hide-a-bed back into the upright sofa position, reverse the process.

**Jack Knife Sofa (If So Equipped)**
The Jack Knife sofa functions much the same as a residential futon. To make the sofa in to a bed, lift up on the bottom seat cushion and pull it towards you. The sofa back will drop down to provide a sleeping surface. For additional comfort and to reduce fabric damage, you may want to place a cover or air mattress (customer supplied) over the sofa when it is in the sleeping position.

**Trifold Sofa (If So Equipped)**
The Trifold Sofa offers very similar features to the traditional hide-a-bed. The following illustrations detail converting the sofa into a bed.

1.Remove tri-fold sofa pillows and set aside

2. Using the strap handle, pull sleeping surface up, then out.

3. While sleeping surface is up,fold out legs. Extend sleeping surface until grounded.

4. Once sleeping surface is grounded, fold headboard down flat.

**J-Cube Sofa (If So Equipped)**

The J-Cube Sofa functions similar to a residential futon. The slanted back pillows offer numerous options as a sofa, along with the ability to extend the cushions for additional sleeping space.

## Recliner (If So Equipped)

Like a residential recliner, the recliner has side controls allowing you to recline the chair. To reverse the recliner chair back to the upright position, depress the side control and gently apply pressure to the recliner leg rest. Refer to the furniture manufacturer's care instructions for this product.

## Free-Standing Table & Chairs (If So Equipped)

The free-standing dinette table can be positioned to seat up to four people. To prevent damage, the standard free-standing dinette chairs should be fastened securely at the dinette table when you are traveling

## Booth Dinette (If So Equipped)

The dinette is designed to seat up to four adults. You can access the dinette bench storage by removing all the cushions and lifting the bottom seat supports. If the dinette bottom seat support is screwed shut, it is to protect factory-installed equipment (do not use that area for storage). To convert back to a booth dinette, reverse the process.

The booth dinette can be converted into a bed. To convert, remove all the cushions from the booth dinette. Lift the tabletop, remove the detachable table legs and place the tabletop on the ledges provided between the booth dinette benches. Lay the seat back cushions against the back of the booth dinette bench. Lay the dinette seat bottom cushions in between the seat back cushions. The area where the cushions meet should be slightly raised. Push the raised cushion ends down gently. The cushions are designed to fit snugly. Reverse this process when converting back to the booth dinette.

## Cabinetry & Tables

To keep hardwood doors, cabinet fronts and hardwood tables looking like new regularly dust with a soft cloth dampened with a cleaning polish or mild detergent solution. Avoid

using ammonia based products or silicone oils as they may cause damage if used over a long period of time.

The finish is durable and resistant to most household spills. However, spills should be wiped up promptly to avoid potential problems. Excessive prolonged exposure to direct sunlight, high temperatures and high humidity can cause damage to both the finish and the wood itself. These should be avoided.

## Pantry (If So Equipped)

Depending on the kitchen layout of your recreation vehicle, you may have a pantry that you can use to store items you wish to take with you as you travel and camp. Ensure items stored in the pantry are secured so they do not shift during travel.

The cabinetry has been designed to accommodate the normal camping items (i.e., paper plates, flatware, cookware, etc.) which are bulky but not necessarily heavy.

**Remember your recreation vehicle's load capacity is designed by weight, not volume, so you cannot necessarily use all available space.**

## Countertops

To prevent permanent damage

- □ Always use hot pads or trivets under hot pans, dishes, or heat producing appliances such as frying pans.
- □ Always use a cutting board; never use a knife on the countertop.
- □ Avoid harsh chemicals such as drain cleaners, oven cleaners, etc.
- □ Do not let cleaners with bleach set on the top. Wipe them off promptly.

Laminate countertops (if so equipped)
Glass rings, food spills, water spots and smudges usually wipe off with a damp sponge. Stubborn stains can be removed with a general-purpose spray cleaner. Some stains can be removed by squeezing fresh lemon juice over the stain and allowing the juice to soak for approximately forty-five minutes. After 45 minutes, sprinkle baking soda over the lemon juice and rub with a soft cloth.

**Solid surface countertops (if so equipped)**
Solid surface materials are easy to care for. Soapy water, ammonia based cleaners (not window cleaners as they can leave a waxy build up that may dull the surface) or commercially available solid surface cleaners will remove most dirt and residue from all types of finishes. A damp cloth followed by a dry towel will remove watermarks. Disinfect the surface periodically with diluted household bleach (one part water to one part bleach).

For additional information on the removal of difficult stains or surface damage repair, refer to the countertop manufacturer's user guide.

## Interior Wall Panel

Please contact your dealership service department for assistance in repairing décor paneling. If deep scratches occur on the wall panel, putty sticks can be used to cover scratches on wood surfaces. These can be obtained from local hardwood stores and lumberyards.

To clean, use a mild solution of soap and lukewarm water with a soft sponge or cloth. Wipe dry with a soft, clean cloth.

**⚠ CAUTION**

Do not use abrasive cleaners as they may cause the vinyl to scratch and become dull. Do not use cleaners that contain bleach..

## Flooring

Always test a cleaning agent in an inconspicuous area for colorfastness.

**Carpet**

Vacuum your carpet regularly. It is important to remove loose soil and debris while it is on the surface.

Heavily traveled areas (i.e., walkways, areas in front of the furniture) may be protected with small throw rugs to prolong the life of the carpet.

Prompt attention to spots and spills is essential. Remove as much of the spill as possible. Absorb wet spills as quickly as possible by blotting repeatedly with white paper or cloth towels.

Refer to the manufacturer's guide included in your Warranty Packet for detailed cleaning information, or contact a cleaning professional.

**Vinyl flooring**

Periodically vacuum or sweep to remove dirt and gritty particles. Although most common spills will not permanently stain the vinyl floors, they are usually easier to remove if wiped up before they set. Simply blot with a paper towel and wipe clean with a damp cloth. Do not use dish detergents or vinegar and water because they will dull your floor.

To care for the vinyl floor covering, use a damp mop with water and a mild cleaner on the entire floor. DO NOT SOAK THE FLOORING. Use care to avoid wetting the carpet edges. To avoid problems of "yellowing" linoleum, the flooring manufacturer recommends avoiding cleaners that contain oil based solvents (i.e. cleaners containing lemon oil, Murphy's Oil Soap, etc.).

## Décor Items

Décor items such as window treatments, day/night pleated shades, mini blinds and décor glass should be cared for as follows:

**Window treatments**

Dust occasionally with a vacuum and soft brush attachment.

**Day/Night Roller Shades (if so equipped)**

Roller Shades can be easily cared for by simply using soapy water or a mild cleaning solution on spots. However try a small area first. Harsh household cleaners or detergents may cause damage to fabric or loss of color. It is our recommendation to dust the rails and fabrics of the shades on a regular basis.

**Mini Blinds (if so equipped)**

Dust occasionally with a vacuum and soft brush attachment or venetian blind duster. Plastic rails can be cleaned with mild soap and water applied with a soft cloth.

**Décor Glass (if so equipped)**

Use a glass cleaner to remove smudges, smears and spots. If there is any decorative etching on the décor glass, use care when cleaning around that area.

## ABS Plastics

Dust and wipe clean with soft, damp cloth or chamois, wiping gently. Do not use gritty or abrasive particle soaps or scouring compound to clean ABS plastic. Avoid using “Citrus” or biodegradable cleaners which contain “D-Limonene” as they may damage plastic materials.

## Floor Safe (If So Equipped)

Your recreation vehicle may have a safe mounted on the floor of the closet or under the bed. The safe is intended to help to safeguard valuable items. Jayco cannot be held liable for loss of personal property that is placed within the safe. To secure items in the safe, utilize the key provided with the safe and lock it after placing items in the box. Store the key in a location away from the safe.

Notes:

## Cleaning The Exterior

To protect your recreation vehicle's exterior finish, wash it often and thoroughly.

For recreation vehicles with painted exterior graphics: If desired you may wash and wax your vehicle 60 days after purchase. The exterior paint does need time to cure before any wax is applied to the exterior surface. Careful maintenance for the first 60 days will assure a long lasting durable finish.

Your recreation vehicle is exposed to many environmental conditions that have an adverse affect on the paint finish:

- □ Road Salt and Sodium Chloride
- □ Road Tar / Bugs
- □ Bird Droppings / Tree Sap
- □ Industrial Fallout / Acid Rain /Pollution
- □ UV Exposure and Moisture

The most common problems resulting from these conditions are corrosion, staining, and chemical spotting. Generally, the longer the foreign material remains in contact with the exterior finish, the more extensive the damage. These problems can be minimized by regularly scheduled washing and polishing. Wash your recreation vehicle as soon as possible if it becomes contaminated with foreign material.

Avoid parking under trees or near ocean sea salt. Ice or snow should not be scraped from the painted surface: Brush off!

Gravel roads should be avoided. Anti-freeze, gasoline or washer solvents if spilled on the painted surface should be rinsed off with water immediately. Bugs and bird droppings should be rinsed off daily.

**Washing**

Commercial washing should be avoided. Wash with cold water using a mild liquid soap. Dry wiping with a dry cloth is not recommended.

Make sure the recreation vehicle's surface temperature is cool, under 90 F, and out of direct sunlight. A shaded area is ideal for washing your vehicle as direct sunlight causes water spotting. Use a mild soap or detergent. Most auto care stores will carry a car wash shampoo. Try to avoid combination wash-n-wax products as these waxes can cause build up and are designed for smaller surfaces. Have two dedicated sponges or wash mitts: one for the exterior walls and one for the wheels and under- carriage. Brushes or wash mitts that are made of plastic bristles are acceptable for use on tires and wheel wells, but are not intended for use on the exterior walls. Avoid using such items on painted surfaces as they will damage the finish. Wash the wheels and wheel wells first as this removes heavy dirt and debris and prevents it from splattering on panels. Wet the entire area down to remove loose dirt and grime, then hand wash one area at a time using your dedicated paint finish sponge or wash mitt.

Wash from the top and work your way down, rinsing frequently to minimize grit abrasion. Follow with a final rinse of water. This process will remove most contamination from the recreation vehicle's surface. For stubborn stains such as road tar or bug stains, use an ammonia based glass cleaner or a small amount of rubbing alcohol on a damp cloth followed immediately by warm soapy water, and rinsing with clean water.

This may not dissolve the road tar, but it will loosen tar and bug stains and remove them

from the surface. Do not use solvent based cleaners on bird droppings or tree sap as these are water based stains. They can be dissolved using ammonia based glass cleaner, warm soapy water and a little "elbow grease". Once again, after removing stubborn stains immediately rinse with clean water.

Drying the recreation vehicle is just as important as washing your vehicle. Tap and well water contain many chemicals that could water stain your vehicle's finish. We suggest using a damp natural or synthetic chamois. There are other drying products such as lint-free micro-fiber towels that work just as well.

**During cold weather**

Salt and other chemicals that are spread on winter roads in some geographical areas can have a detrimental effect on the recreation vehicle's underbody. **If your recreation vehicle is exposed to these conditions, spray the underbody with a high-pressure hose every time you wash the exterior of your recreation vehicle.**

Take special care to remove mud or other debris that could trap and hold salt or moisture. After washing your recreation vehicle, wipe off all water drops from the rubber parts around the slideout and doors.

NOTE: When the slideout or door is frozen, opening it by force may tear off or crack the rubber gasket that is installed around the slideout or door. Therefore, pour warm water on the gasket to melt the ice (wipe off the water thoroughly after opening the slideout or door). To prevent the weather stripping from freezing, treat it with a silicone spray.

**Waxing**

Wax your recreation vehicle once or twice a year, or when painted surfaces do not shed water well. Use a soft cloth to apply a small amount of wax to the painted surfaces. After the wax has dried, polish the recreation vehicle with a dry, soft cloth. Do not wax your recreation vehicle in direct sunlight. Wax it after the surfaces have cooled.

Do not apply wax to any area having a flat black finish as it can cause discoloration. If the finish has been stained with wax, wipe off the area with a soft cloth and warm water. When waxing the area around the various openings, do not apply any wax on the weather-strip. If it is stained with wax, the weather-strip cannot maintain a weatherproof seal around the opening.

**⚠ CAUTION**

Do not use waxes containing high-abrasive compounds. Such waxes remove rust and stains effectively from the paint work, but they are also harmful to the luster of the painted surface since they scrape off the coating. Further, they are detrimental to glossy surfaces, such as the grille, garnish, moldings, etc. do not use gasoline or paint thinners to remove road tar or other contamination to the painted surface.

**Polishing your recreation vehicle**

If painted surfaces have been severely damaged and have lost their original luster and color tone, polish the surface lightly with a fine polishing compound. Avoid limiting your polishing to the damaged surface only; polish a somewhat wider area, moving the polishing cloth in one direction. After polishing, flush the compound from the surface and apply a coat of wax to regain a beautiful luster.

**⚠ CAUTION**

Do not use a buffer and a buffing compound as it may damage the exterior surface. Please contact a professional paint body shop for assistance.

**Damaged paint**

To prevent corrosion, touch up small cracks and scratches in the paint coat as soon as possible with touch-up film or paint. Carefully check the body areas facing the road and the tires for damage to the paint coat caused by flying stones, etc. To purchase touch-up paint, use the closest automotive paint (available locally) match possible.

**Cleaning plastic parts**

Use a sponge or chamois to clean plastic parts. Use warm water and a soft cloth or chamois to remove any white residue from dark colored plastic surfaces. Do not use a scrubbing brush, other hard tools, or wax containing abrasives as they may damage the plastic surface.

**⚠ CAUTION**

Do not allow plastic to come into contact with brake fluid, engine oil, grease, paint thinner, or batter acid. These will damage plastic. Use a soft cloth and a mild detergent solution to wipe away any such contact..

**Chrome parts**

To prevent chrome parts from spotting or corroding, wash with water, dry thoroughly, and apply a non-abrasive automotive wax. If the chrome is severely damaged or pitted, use a commercially available chrome polish product.

## *Frame*

Sand, pebbles, objects on the highway, climate (salt air exposure) or ice inhibiting chemicals used during the winter months will damage the paint, inviting rust and other deterioration. Periodically inspect the exterior exposed areas, clean and repaint the frame members occasionally and whenever you notice rust or paint chipped away, to insure protection.

## *E-Z Lube Axle (If So Equipped)*

The E-Z lube feature on your axles provides the ability for the bearings to be periodically lubricated without removing the hubs from the axle. This feature consists of axle spindles that have been specially drilled and fitted with grease zerks in their ends. When grease is pumped into the zerk, it is channeled to the inner bearing and then flows back to the outer bearing and eventually back out the grease cap hole. If you have further questions, consult with your dealer.

**NOTE:** The convenient lubrication provisions of the E-Z lube must not replace periodic inspection and maintenance of the bearings. Use a hand-operated grease gun; improper use of a commercial grease gun may damage the seals.

## Exterior Roof & Sidewall Vents

While you are cleaning the exterior roof assembly, also inspect the roof vents (including sealants) for cracks and keep them clean. Inspect the refrigerator and holding tank vents for blockages from bird nests, spider webs, leaves, etc. All exterior access doors and vents need to be kept clean and free of obstructions (i.e., insect nests, mud daubers, etc.) while the appliances are in use.

## Windows

Any ventilating window may permit water inside, especially during heavy rainstorms. Condensation will also cause water to accumulate on windows and in the tracks.

The window "glass" can normally be cleaned with a sponge and water. Use glass cleaner to remove wax, oil, grease, dead insects, etc. After washing the glass, wipe it dry with a clean, soft cloth.

## Roof Ladder (If So Equipped)

Your recreation vehicle may be equipped with an optional roof ladder. The recreation vehicle roof has decking under the rubber roof membrane to allow you to walk on the roof (with caution) to do maintenance.

**⚠ WARNING**

NIf your recreation vehicle is equipped with a roof ladder, do not leave items attached to it while traveling. The ladder has a weight limit of 350 lbs. when using it to access the roof. DO NOT exceed this weight limit.

## Sealants

**⚠ CAUTION**

Failure to properly maintain or reseal your recreation vehicle may result in serious water damage to the roof and other parts of the recreation vehicle. This damage is not covered by the Towable Limited Warranty..

Sealants perform a very important function and should be inspected closely and regularly maintained. We incorporate many different types of sealants, including butyl/putty, black butyl-encapsulated foam, silicone (clear and colored), roof sealant and foam. In general, sealants do not have "set" lifetimes. Varying environmental factors affect the pliability and adhesiveness of sealants.

You or your dealer must:

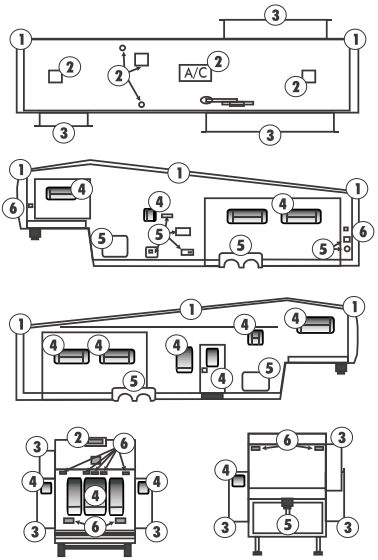
- □ Inspect all sealants, a minimum of every six months. Make sure to check the roof and all four sides of the recreation vehicle including al moldings, doors, vents and exterior attachments. A quick walk around the recreation vehicle before leaving may help prevent potential problems during trips and vacations.
- □ Have the sealant replaced if you notice any cracks, peeling, voids, gaps, breaks, looseness or any sign of physical deterioration. Reseal at least one time each year as preventative maintenance.
- □ Always use the same type of sealant that was removed. Your dealer recreation vehicle service or parts manager can help you obtain the correct sealant(s).

The sealants may become damaged due to road vibration, ultraviolet exposure, air pollution, freezing temperatures and exposure to other elements. If deteriorated, repair immediately to prevent damage.

If you notice water inside the recreation vehicle, immediately have the dealer check for the source of the leak. Failure to correct the leak may result in serious damage to your recreation vehicle; this damage may not be warrantable.

Although the diagrams below may not accurately reflect the exact model of your recreation vehicle, make sure you inspect all sealants as indicated in the text. If you have questions and/or need assistance with sealing your recreation vehicle, consult with your recreation vehicle dealer.

## *Fifth Wheels* *Sealant Diagram*




1. Trim Edges
2. Roof items
3. Slideout Roof/Floor
4. Windows/Doors
5. Storage Compartments/ Access Doors/Wheel Wells
6. Lights

Notes:

## RV Start-Up

The following checklist will help ensure a trouble-free camping season:

- □ Inspect and work all interior and exterior latches and locks (lube if necessary).
- □ Make sure the batteries are fully charged and installed correctly.
- □ Inspect the power cord and carefully clean the contacts if necessary. Plug in the power cord to an appropriate power source.
- □ Turn on the interior lights and check outlets for polarity. If needed, replace any blown fuses. Check the circuit breakers and test the GFCI.
- □ Inspect and test all safety detectors. If needed, replace any drained or discharged batteries. If you have a defective or damaged safety detector, replace it immediately.
- □ Inspect and turn on the propane system. If you have any questions, contact your dealer or a qualified propane service representative for assistance.
- □ If the propane system is functioning properly, test the pilot lights on range, refrigerator, furnace and water heater (if so equipped).
- □ Inspect the leveling jacks (if so equipped) for operation. If needed, perform maintenance as specified by the leveling jack manufacturer.
- □ Test all exterior and interior lights. Replace any bulbs if they are burnt out.
- □ Inspect the tires for wear, cracks and inflation pressure.
- □ Wash the exterior of the RV. Do a sealant inspection and repair as necessary.
- □ De-winterize and sanitize the fresh water system.
- □ Connect your tow vehicle to the RV and test all connections and lights.

## Ready To Leave Checklist

Before leaving or returning home, it is critical that you complete the necessary procedures to ensure a safe trip. As you develop a routine, it is possible that a checklist will be helpful. This is a general list, which you may want to customize as you determine your own needs

- □ Make sure you follow all safety precautions noted in this owner's manual and in any manufacturer's operators manual when preparing to travel.
- □ Check the area under the RV after overnight parking and look for water or other fluid leaks. If leaks are detected, find the cause and correct it immediately.
- □ Make sure all tow vehicle fluids are at proper levels. Check the engine oil, transmission fluid, engine coolant, power steering fluid and wind shield washer fluid.
- □ Check the lights on the RV. Have someone observe the operation of all exterior lights while you activate the controls. Check the turn signals and brake lights.
- □ Examine the tires for excessive tread wear or uneven wear patterns. Check for stones, nails, glass or other objects lodged in the tread. Inspect for tread cuts or sidewall cracks.
- □ Check wheel lug nuts for tightness and tires for proper air inflation pressure.
- □ Check the propane cylinder gauge to make sure there is propane available. Make sure the propane cylinder is in place and secure for transport.

**Interior**

- □ Close roof vents.
- □ Close windows & latch blinds.
- □ Counter items put away or tied down.
- □ Furnace turned off.
- □ Latch drawers, cabinets & doors.
- □ Turn off interior lights and appliances.
- □ Disconnect any cable TV or phone hookups.
- □ Lower the TV antenna (if so equipped).
- □ Move slideout (if so equipped) in and lock it in place.
- □ Fasten and secure the furniture for travel (if so equipped).
- □ Refrigerator door locked (if so equipped).
- □ Set refrigerator to 12-volt (if so equipped).
- □ Water heater turned off (if so equipped).
- □ Water pump turned off (if so equipped).

**Exterior**

- □ Empty black holding tank, rinse as needed (if so equipped).
- □ Empty gray holding tank (if so equipped).
- □ Pack equipment into compartments and secure it.
- □ Propane turned off.
- □ Retract awning and secure in place for transport (if so equipped).
- □ Retract step.
- □ Snap the Range Hood vent closed (if so equipped)
- □ Retract leveling jacks to the travel position (if so equipped)
- □ Water hose & electric cord unhooked and stored.
- □ Check tire pressure-include inner wheel and spare (if so equipped).
- □ Check wheel lugs.
- □ Test brakes for proper operation.
- □ Secure any loose, heavy or sharp objects in the RV or exterior compartments.
- □ Disconnect the shore line power cord and ensure it is stored correctly.
- □ Fasten all interior and exterior doors securely. Lock them (if so equipped).
- □ Secure and lock the entrance door.
- □ Walk around your RV one last time to make sure everything is stored away and the baggage compartments are closed and locked.

## RV Storage

Properly preparing your RV for storage during periods of non-usage will prevent problems from arising. It will also make it easier to get started again for the following camping trip or season. To prevent costly freeze-ups, winterize the plumbing system when it will not be in use for an extended period of time, especially if it is stored in colder climates.

Periodically inspect your RV for damage during storage, and seal off any area that can offer an entry point for rodents, birds or insects. **Damage from birds, rodents, insect, etc., is not covered under the "Towable Limited Warranty" applicable to your RV.**

When storing your RV, it is recommended that the auxiliary battery (customer supplied) be disconnected to avoid battery discharge.

**Prior to Storage**

If storing for the winter, be sure the RV is winterized (refer to **Sec. 8 Plumbing System**, Winterizing the plumbing system).

- □ Check your roof and other surfaces to ensure there is no damage and potential leakage that might otherwise go unnoticed until it is too late.
- □ Close all windows and roof vents.
- □ Close the propane cylinder valve(s). If you do not have a propane cylinder cover, we recommend purchasing one to make sure the regulator is covered.
- □ Cover all external outlets, such as furnace, exhaust, etc. to prevent mice or other rodents from entering.
- □ Cover the roof air conditioner (if so equipped).
- □ Disconnect 120-volt AC power to the RV.
- □ Do not use the stabilizing jacks during storage.
- □ Drain all water lines.
- □ Drain and flush all holding tanks (fresh water, gray water, black water and/or hot water tanks).
- □ Remove all batteries from the RV and store in a place where they won't freeze. Batteries that have been frozen will never hold a proper charge.
- □ Store your RV indoors, under a roof or purchase a "breathable" cover for use during storage.
- □ Thoroughly wash the interior and the exterior of your RV.
- □ To prevent weather checking and other UV damage, cover tires that are exposed to sunlight.
- □ Turn all cushions on edge to prevent the moisture/mildew buildup during storage.
- □ Turn off 12-volt DC/120-volt AC/propane to the refrigerator; defrost and clean (if so equipped). Prop (or block) the doors open so air can circulate and prevent mildew or use crumpled newspaper or open boxes of baking soda in the refrigerator to eliminate odors during storage.
- □ Remove all perishables from the cabinets. Leave the cabinets and doors ajar to allow air circulation and prevent mildew and musty odors.
- □ Remove all perishables from the cabinets. Leave the cabinets and doors ajar to allow air circulation and prevent mildew and musty odors.
- □ Lubricate locks and hinges on exterior doors.

**During Storage Period**

Remove snow from the top of your RV to prevent damage to the unit's structure.

**⚠ CAUTION**

Excessive snow, 8” or more, or ice, 2” or more, places excessive weight on the RV roof. Remove excessive snow or ice as needed. Care MUST be exercised to not damage the roof material when removing snow & ice. Excessive weight can damage the roof, seals, etc. Water leaks and poor fit or operation are the results of this damage.

## Maintenance Checklist

This list is a quick reference sheet for suggested areas of regular maintenance. Review all manufacturer’s operators manuals supplied with your RV to perform these listed maintenance items.

**Prior to First Trip**

- □ Inspect and reseal as needed.
- □ Have the propane system checked for leaks by your dealer.
- □ Check wheel lug nuts at specified intervals to listed torque specifications, re-torque as needed.
- □ Sanitize the fresh water system.
- □ Test the safety alarms.

**First Two-Hundred Miles**

- □ Check wheel nuts at specified intervals to listed torque values. Re-torque as needed.
- □ Have brakes adjusted by a qualified service technician.

**Each Trip**

- □ Inspect and reseal as needed.
- □ Check the auxiliary battery (If so equipped).
- □ Have the propane system checked for leaks by your dealer.
- □ Check running lights.
- □ Check tire pressure and wear, including spare (if so equipped). Make sure the tires are cold when checking the tire pressure.
- □ Flush out water heater tank.
- □ Inspect safety chains for signs of wear.
- □ Test brakes.
- □ Test safety alarms.

## Featured Components Quick Reference Chart

Your motor home may be equipped with some of the items listed below. This is a partial listing and it is not intended to cover all components in your motor home. All information is the latest available at the time of publication. Entegra Coach reserves the right to change any of the following information without notice.

| COMPONENT | MANUFACTURER | WEBSITE |
|---|---|---|
| Air Conditioner | RV Products | www.rvcomfort.com |
| Awning | Carefree of Colorado | www.carefreeofcolorado.com |
| Axle | Dexter Axle | www.dexteraxle.com |
| DVD/CD | See manufacturers' user guide | |
| Entrance Step | Hickory Springs | www.hickorysprings.com |
| Fan, Exhaust 12V | Ventline | www.ventline.com |
| Fire Extinguisher | See manufacturers' user guide | |
| Furnace | Atwood/Hydroflame | www.atwoodmobile.com |
| Microwave | See manufacturers' user guide | |
| Monitor Panel | KIB Enterprises | www.kibenterprises.com |
| Outside Shower | B & B Molders | www.bandbmolders.com |
| Propane Tank | Manchester Tank | www.mantank.com |
| Propane/Carbon Monoxide Alarm | See manufacturers' user guide | |
| Propane Regulator | Marshall Brass | www.marshallbrass.com |
| Range | Atwood | www.atwoodmobile.com |
| Range hood | Ventline Inc. | www.ventline.com |
| Refrigerator,Norcold | Norcold | www.norcold.com |
| Smoke Alarm | See manufacturers' user guide | |
| Tank Sprayer/BLK | B & B Molders | www.bandbmolders.com |
| Thermostat | RV Products | www.rvcomfort.com/rvp |
| Toilet | Thetford Corp. | www.thetford.com |
| TV | See manufacturers' user guide | |
| TV Antenna | Winegard Company | www.winegard.com |
| Water Heater, Tank DSI | Atwood Greenbrier Operations | www.atwoodmobile.com |
| Water Heater, Tankless | Girard Systems | www.girardsystems.com |
| Water Pump, 12V | Shurflo East | www.shurflo.com |

## *Vehicle Maintenance Record*

Make: _____

Model: _____

Model Year: _____

Vehicle Serial#:

| Service Date | Mileage | Work Performed | Performed By | Notes |
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| Service Date | Mileage | Work Performed | Performed By | Notes |
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**Notes:**

**Notes:**

**Jayco**
**Ownership Notification**
ATTENTION!
**Fax Form To: (800) 825-7876**

Federal record keeping laws require that we maintain a file of owners of our product. Your cooperation in filling out this from will be appreciated.

☐ Change of Owner

☐ Transfer of Limited Warranty
(see limited warranty for details)

**Model Information:**

Serial#: _____

Chassis #: _____ Odometer Reading _____
(Motorized only)

**New Owner Information:**

Purchased Date: _____

Name: _____

Address: _____

City: _____ State/Province: _____ Zip Code_____

Phone # _____ E-Mail Address _____

**Previous Owner Information:**

Purchased Date: _____

Name: _____

Address: _____

City: _____ State/Province: _____ Zip Code_____

Phone # _____ E-Mail Address _____

**Notes:**